Access DB# 100202

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Laura Wenel Examiner #: 7124 Date: 7/31/03
Art Unit: 1745 Phone Number 30 4-4376 Serial Number: 09/942,991
Mail Box and Bldg/Room Location: 9C70 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See Front Sheet

Inventors (please provide full names):

Earliest Priority Filing Date:

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

I) Could you search for a battery having a trimer Compound Comprising 3 units of indole & Condensed ring

II) See claim 3 for a Specific Compound

III Search for a Capacitor Comprising the trimer Compound.

Thanks,
Laura

* Please find hard copy of claims

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: EL	NA Sequence (#)		STN	$72.22
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	✓ (1)	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	✓ (and)	Dr.Link	
Date Completed: 8-5-03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 5	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 55	Other		Other (specify)	

PTO-1590 (8-01)

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=> file reg
FILE 'REGISTRY' ENTERED AT 17:24:37 ON 05 AUG 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> d his


     FILE 'HCAPLUS' ENTERED AT 16:57:33 ON 05 AUG 2003
L1          2114 S KUROSAKI ?/AU
L2          8711 S NISHIYAMA ?/AU
L3            71 S KAMISUKI ?/AU
L4         27313 S NAKAGAWA ?/AU
L5         68593 S YOSHIDA ?/AU
L6            61 S NOBUTA ?/AU
L7          4326 S MITANI ?/AU
L8             3 S L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7
                 SEL L8 1-3 RN

     FILE 'REGISTRY' ENTERED AT 16:58:11 ON 05 AUG 2003
L9            23 S E1-E23
                 E C24H12N6O6
L10           16 S E3
L11            1 S L9 AND L10
                 E 10901.4.1/RID
L12          125 S E3

     FILE 'HCA' ENTERED AT 17:05:03 ON 05 AUG 2003
L13        89571 S CAPACIT!R? OR CAPACIT!NC?
L14       184104 S BATTERY OR BATTERIES OR (ELECTROLY? OR ELECTROCHEM? OR
L15           22 S L12
L16            5 S L15 AND (L13 OR L14)
L17           17 S L15 NOT L16

     FILE 'REGISTRY' ENTERED AT 17:24:37 ON 05 AUG 2003


=> file hca
FILE 'HCA' ENTERED AT 17:24:51 ON 05 AUG 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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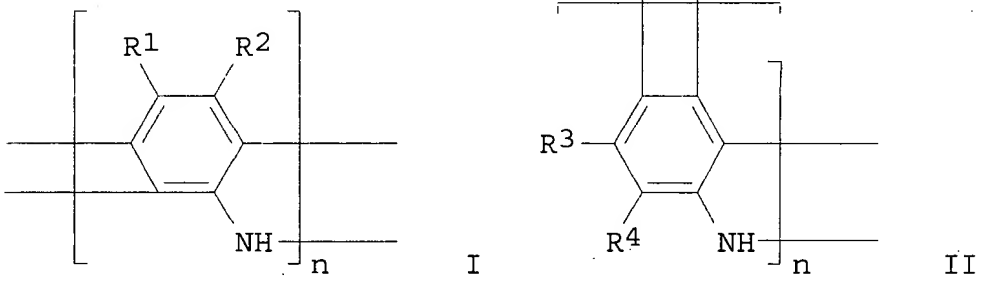
=> d l16 1-5 ibib abs hitstr hitind

L16  ANSWER 1 OF 5  HCA  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:        138:404315  HCA
TITLE:                   Indole compound having supermolecular structure
                         and secondary battery and
```

capacitor using it
INVENTOR(S): Mori, Mitsuhiro; Naoi, Katsuhiko
PATENT ASSIGNEE(S): NEC Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003155288	A2	20030527	JP 2001-354252	20011120

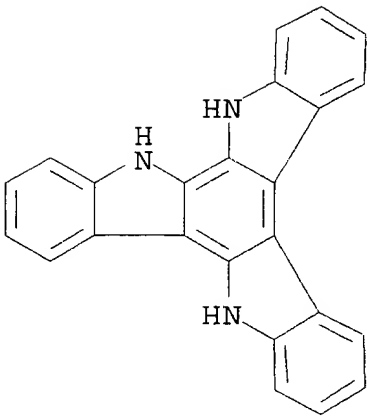
PRIORITY APPLN. INFO.: JP 2001-354252 20011120
OTHER SOURCE(S): MARPAT 138:404315
GI



AB The indole compd. having a supermol. structure is represented by I and/or II [n .gtoreq. 1 ; R1-4 = H, halo, OH, nitro, sulfone, carboxyl, alkyl, cyano, nitro, amino, aryl, or (substituted) heterocyclic ring which may form condensed ring with benzene ring; when n is .gtoreq.2, terminal groups of indoles have groups selected from R1-4]. Preferably, the indole compd. is an indole trimer deriv. having a layered structure. In the secondary **battery** and the **capacitor**, the electrode material or the electrolyte material contains 1-95 wt.% of the indole compd. having a layered structure. The indole compd. has high and uniform elec. cond. and high structural stability, and the **battery** and the **capacitor** have high energy d., power d., and safety.

IT **70381-95-2P**
(layered; indole compd. having supermol. structure for electrode or electrolyte of secondary **battery** and **capacitor**)
RN 70381-95-2 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro- (9CI) (CA INDEX

NAME)



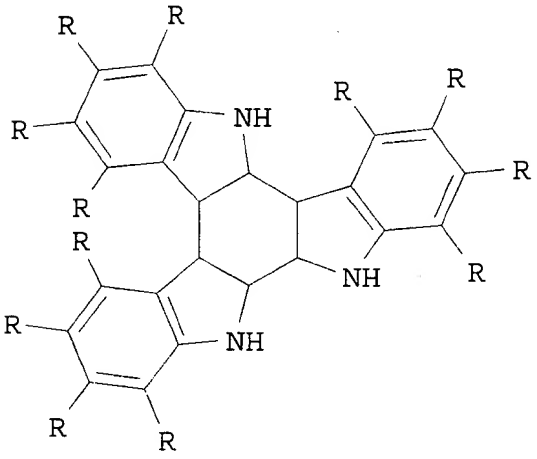
IC ICM C07D487-14
ICS H01G009-025; H01G009-058; H01M004-02; H01M004-60; H01M004-62; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 28, 76
ST indole compd supermol structure elec cond; **battery** **capacitor** indole trimer layered structure
IT **Battery** electrodes
Battery electrolytes
Capacitor electrodes
Electric conductors
Electrolytic **capacitors**
(indole compd. having supermol. structure for electrode or electrolyte of secondary **battery** and **capacitor**)
IT 120-72-9, Indole, reactions
(indole compd. having supermol. structure for electrode or electrolyte of secondary **battery** and **capacitor**)
IT **70381-95-2P**
(layered; indole compd. having supermol. structure for electrode or electrolyte of secondary **battery** and **capacitor**)

L16 ANSWER 2 OF 5 HCA COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 138:388133 HCA
TITLE: **Electrochemical cell** which uses indole compound
INVENTOR(S): Mitani, Katsuya; Nishiyama, Toshihiko; Kamito, Hiroyuki; Harada, Manabu; Kurosaki, Masato; Nakagawa, Yuji; Shinoda, Tomoki; Kaneko, Shinako
PATENT ASSIGNEE(S): NEC Tokin Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003142099	A2	20030516	JP 2001-337837	20011102
US 2003129490	A1	20030710	US 2002-286692	20021101

PRIORITY APPLN. INFO.: JP 2001-337837 A 20011102
GI

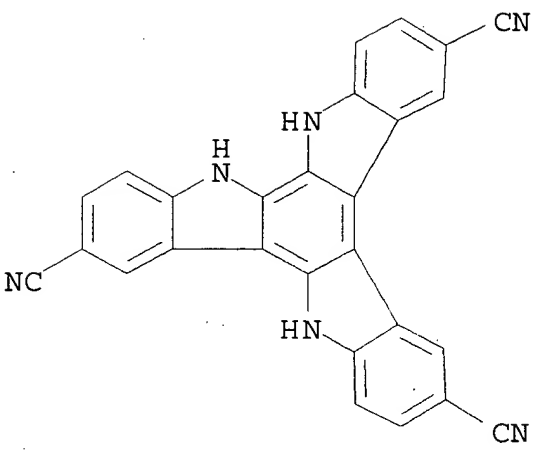


I

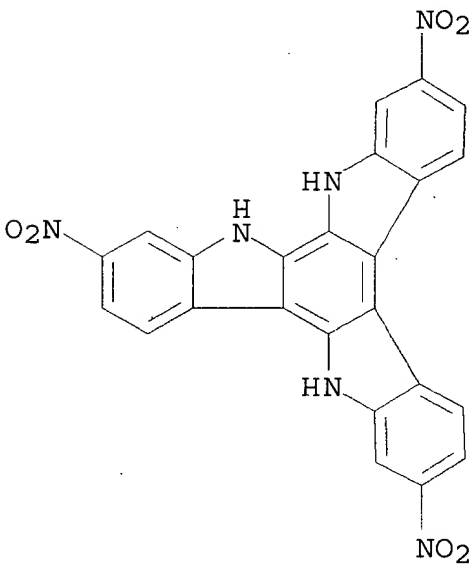
AB The title **cell**, esp. for **secondary batteries** and **capacitors**, has an electrode active mass, contg. a mixt. of a trimer I bonded by position 2 and 3, and an indole (deriv.) tetramer; and uses a proton as charge carrier.

IT **164671-61-8 403694-95-1**
(electrodes contg. indole trimer compds. and tetramers for secondary **batteries** and **capacitors**)

RN 164671-61-8 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro- (9CI) (CA INDEX NAME)



RN 403694-95-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-3,8,13-trinitro- (9CI) (CA INDEX NAME)



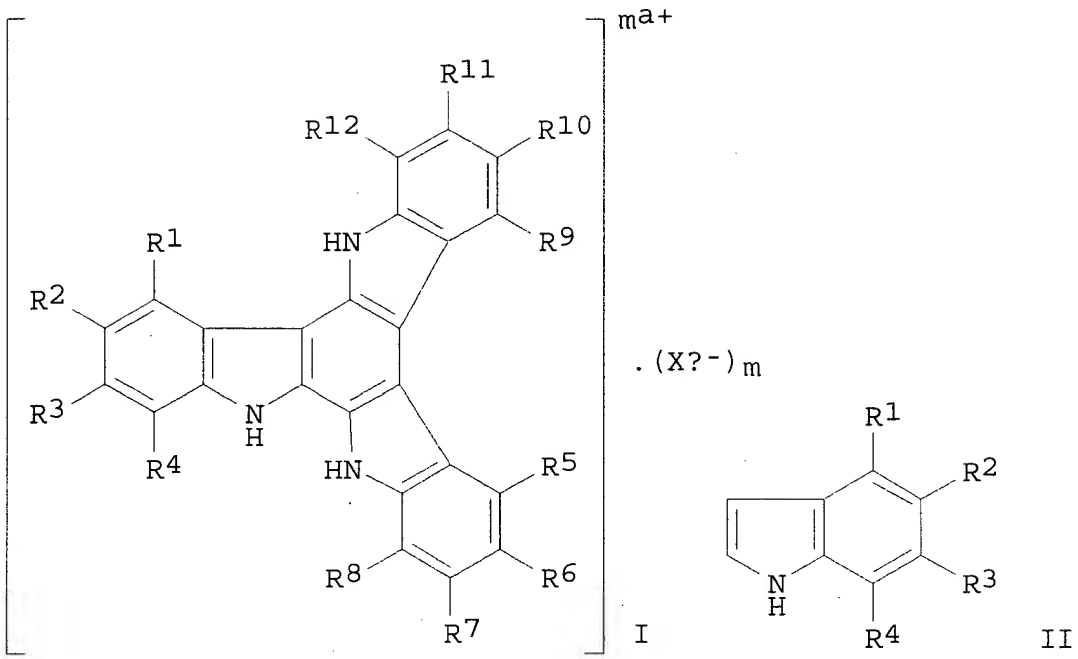
IC ICM H01M004-60
ICS H01G009-038; H01G009-058; H01M004-02; H01M010-36
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST secondary **battery** **capacitor** electrode indol trimer tetramer
IT **Capacitor** electrodes
(electrodes contg. indole trimer compds. and tetramers for secondary **batteries** and **capacitors**)
IT **Battery** electrodes
(electrodes contg. indole trimers and tetramers for secondary

batteries and **capacitors**)
IT 7664-93-9, Sulfuric acid, uses
(dild., electrolyte; electrodes contg. indole trimer compds. and tetramers for secondary **batteries** and **capacitors**)
IT **164671-61-8** 220310-61-2 **403694-95-1**
503269-69-0 527682-27-5 527682-32-2
(electrodes contg. indole trimer compds. and tetramers for secondary **batteries** and **capacitors**)
IT 76-05-1, uses 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium tetrafluoroborate
(electrolyte; electrodes contg. indole trimer compds. and tetramers for secondary **batteries** and **capacitors**)

L16 ANSWER 3 OF 5 HCA COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 136:340667 HCA
TITLE: Method for producing trimer of indole derivative by oxidative cyclotrimerization of indole derivative, and trimer of indole derivative and laminated structure thereof
INVENTOR(S): Maeda, Shinichi; Momose, Fumino; Saitoh, Yoshikazu; Saitoh, Takashi
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: PCT Int. Appl., 107 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002032903	A1	20020425	WO 2001-JP8442	20010927
W: CN, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1327632	A1	20030716	EP 2001-972535	20010927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				

PRIORITY APPLN. INFO.: JP 2000-317045 A 20001017
JP 2001-159604 A 20010528
WO 2001-JP8442 W 20010927
OTHER SOURCE(S): CASREACT 136:340667; MARPAT 136:340667
GI



I

II

AB A method for producing a trimer of an indole deriv. [I; R1 - R12 = H, C1-24 linear or branched alkyl or alkoxy, C2-24 linear or branched acyl, CHO, CO2H or C2-24 linear or branched carboxylic acid ester, SO3H or C1-24 linear or branched sulfonic acid ester, cyano, OH, NH2, amido, halo; Xa- = at least one anion selected from Cl-, Br-, I-, F-, NO3-, SO42-, HSO4-, PO43-, BF3-, ClO4-, SCN-, AcO-, MeCH2CO2-, MeSO3-, p-MeC6H4SO3-, CF3CO2-, and CF3SO3-; a = ion valency of 1-3 integer; m = 0-0.5] comprises oxidizing the indole deriv. (II; R1 - R3 = groups listed in R1 - R12) by the use of an oxidizing agent in a liq. reaction mixt. contg. an org. solvent. The method allows the mass prodn. of the trimer of the indole deriv. with high purity and the novel trimer of the indole deriv. has high electrocond., exhibits high oxidn.-redn. potential and high oxidn.-redn. capacity, and exhibits good redox cycle characteristics. A compn. contg. the trimer I as the main component is useful for antistatics, condenser, **battery**, EMI shied, chem. sensor, display element, org. electroluminescent material, nonlinear material, rust preventive, adhesive, fiber, antistatic coating, plating primer, conductive primer for electrostatic coating, elec. anticorrosion, or electrodeposition (no data). Thus, a soln. of 16.2 g FeCl3 in 5.4 g H2O and 40 mL MeCN was added dropwise to a soln. of 1.42 g indole-5-carbonitrile in 10 mL MeCN over 30 min and stirred at 60.degree. for 10 h to give 86% 6,11-5H-diindolo[2,3-a;2',3'-c]carbazole-2,9,14-tricarbonitrile (III) having elemental anal. of (C9.00H4.03N1.97Cl0.10)3, elec. cond. of 0.50 S/cm, and interlayer distance of 0.4 nm according to x-ray crystallog. III and 6,11-dihydro-3,8,13-trinitro-5H-

diindolo[2,3-a;2',3'-c]carbazole showed redox potential of 1.00 and 1.10 V, resp., a total redn. capacity of 330 and 320 C/g, resp., and redox cycle characteristic [redn. capacity after 10,000 redox cycles compared to that of the first cycle (set for 100)] of 85 and 97%, resp.

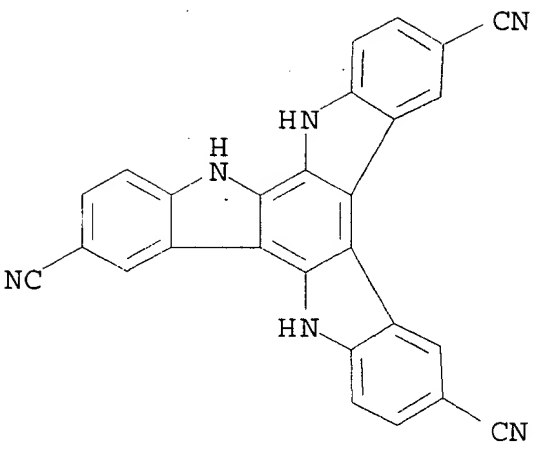
IT **417708-84-0P 417708-86-2P 417708-88-4P**
417708-90-8P 417708-93-1P 417708-94-2P
417708-95-3P 418764-77-9P 418764-80-4P
418764-84-8P 418764-87-1P 418764-90-6P
418764-93-9DP, reaction product with polyvinylsulfonic acid
418764-93-9P 418764-96-2P 418764-99-5P
418765-02-3P 418765-05-6P 418765-08-9P
418765-11-4P 418765-14-7P 418765-17-0P
418765-20-5P 418765-23-8P 418765-26-1P
418765-29-4P 418765-32-9P 418765-35-2P
418765-38-5P 418765-41-0P 418765-44-3P
418765-47-6P 418765-50-1P 418765-53-4P
418765-56-7P 418765-59-0P
(prepn. of trimers of indole derivs. (5H-diindolo[2,3-a;2',3'-c]carbazole derivs.) with high redox potentials by oxidative cyclotrimerization of indole derivs. in presence of oxidizing agents and laminated structure thereof)

RN 417708-84-0 HCA

CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile (3:7) (9CI) (CA INDEX NAME)

CM 1

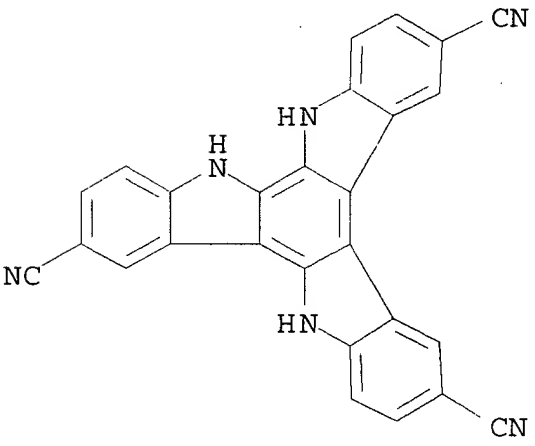
CRN 417708-83-9
CMF C27 H12 N6 . Cl
CCI RIS



● Cl^-

CM 2

CRN 164671-61-8
CMF C27 H12 N6



RN 417708-86-2 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-3,8,13-trinitro-, radical ion(1+), chloride, compd. with 6,11-dihydro-3,8,13-trinitro-5H-diindolo[2,3-a:2',3'-c]carbazole (9:11) (9CI) (CA INDEX NAME)

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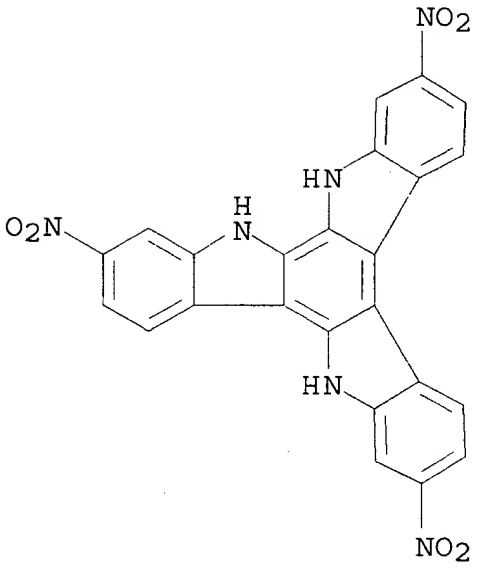
CRN 417708-85-1

CMF C24 H12 N6 O6 . Cl
CCI RIS



● Cl^-

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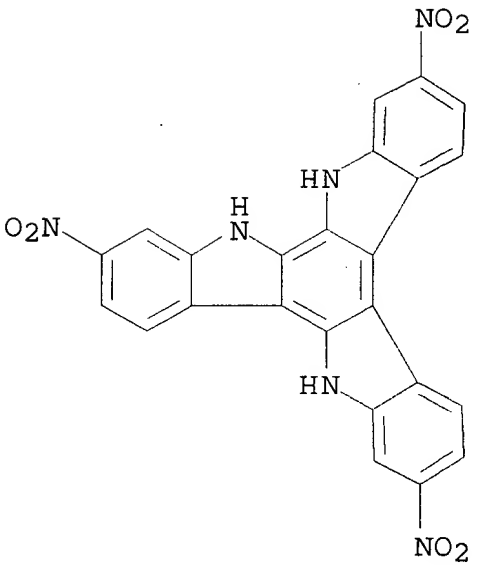

RN 417708-88-4 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid (33:67) (9CI) (CA INDEX NAME)

CM 1

CRN 417708-87-3
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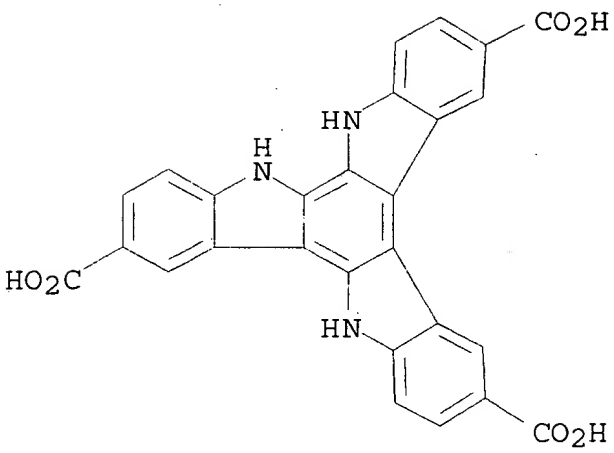
CCI RIS



● Cl⁻

CM 2

CRN 158613-71-9
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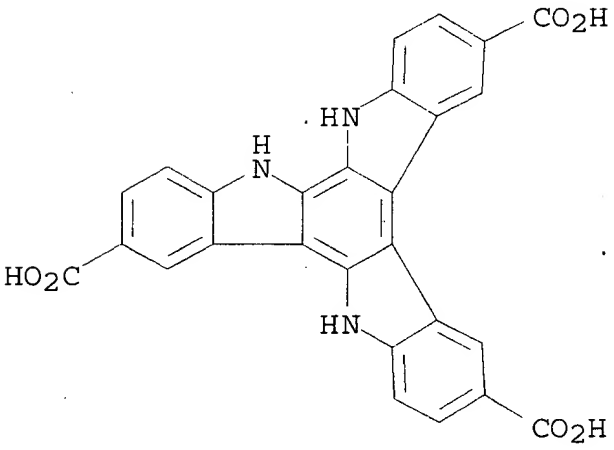

RN 417708-90-8 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-, radical ion(1+), sulfate, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (42:21:58) (9CI) (CA INDEX NAME)

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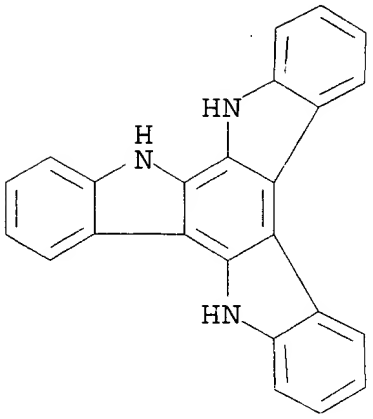
CRN 70381-95-2

CMF C24 H15 N3

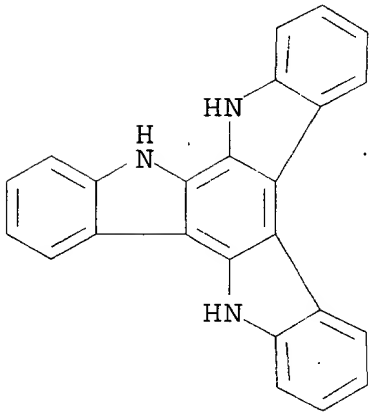


CM 2

CRN 417708-89-5
CMF C24 H15 N3 . 1/2 O4 S

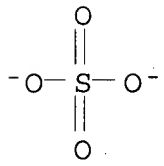
CM 3

CRN 182440-60-4
CMF C24 H15 N3
CCI RIS



CM 4

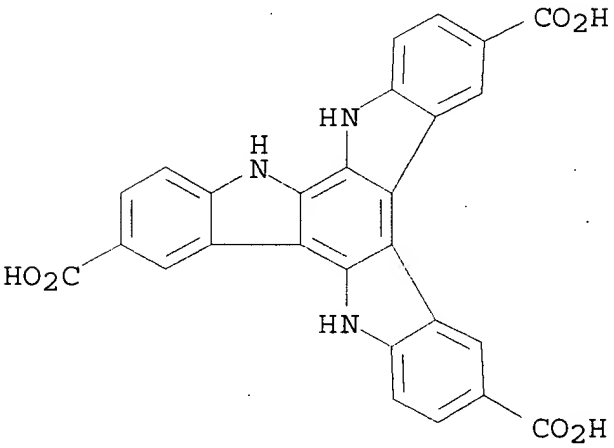
CRN 14808-79-8
CMF O4 S



RN 417708-93-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid, 6,11-dihydro-, radical ion(1+), chloride sulfate, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid (81:9:36:19) (9CI) (CA INDEX NAME)

CM 1

CRN 158613-71-9
CMF C27 H15 N3 O6

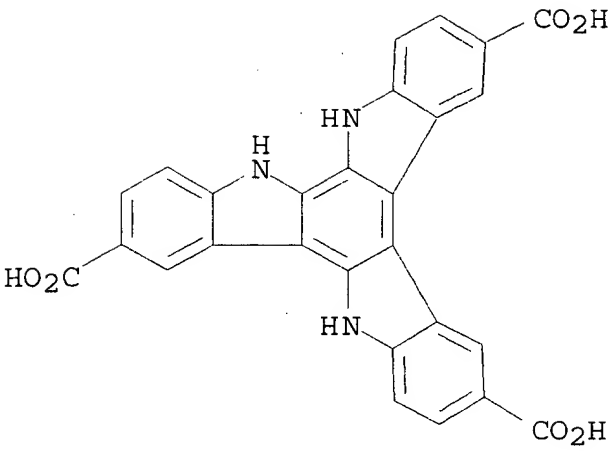


CM 2

CRN 417708-92-0
CMF C27 H15 N3 O6 . 1/9 Cl . 4/9 O4 S

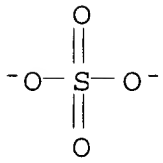
CM 3

CRN 417708-91-9
CMF C27 H15 N3 O6
CCI RIS



CM 4

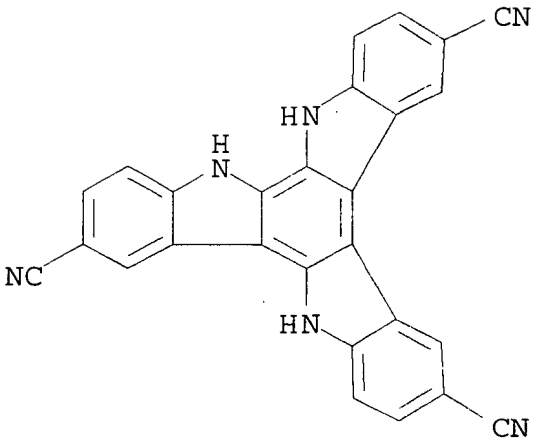
CRN 14808-79-8
CMF O4 S



RN 417708-94-2 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile (33:67) (9CI) (CA INDEX NAME)

CM 1

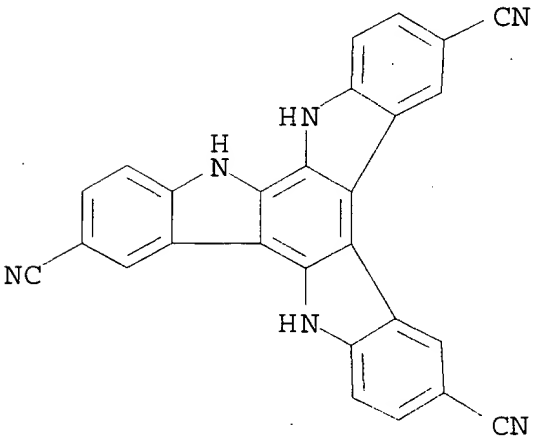
CRN 417708-83-9
CMF C27 H12 N6 . Cl
CCI RIS



● Cl^-

CM 2

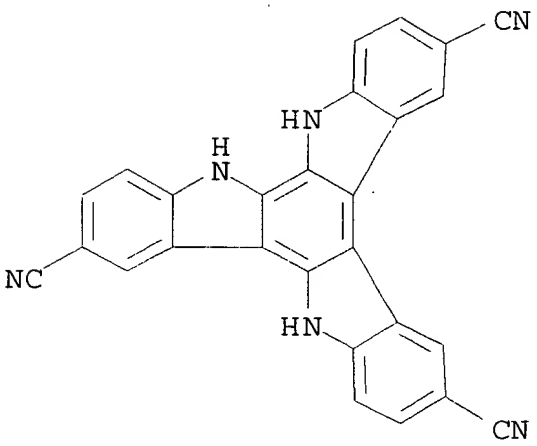
CRN 164671-61-8
CMF C27 H12 N6



RN 417708-95-3 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile (21:79) (9CI) (CA INDEX NAME)

CM 1

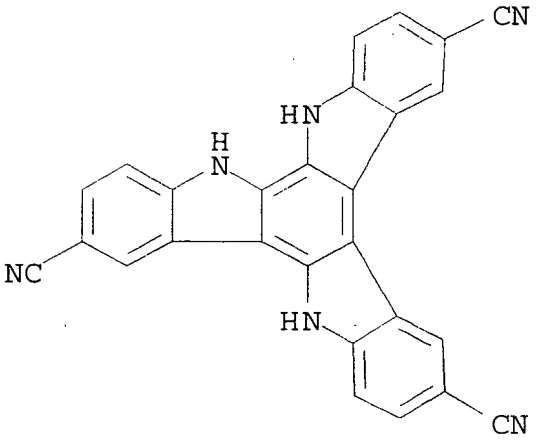
CRN 417708-83-9
CMF C27 H12 N6 . Cl
CCI RIS



● Cl^-

CM 2

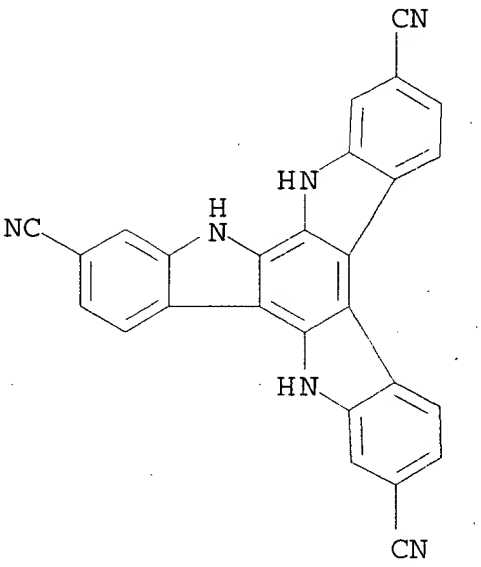
CRN 164671-61-8
CMF C27 H12 N6



RN 418764-77-9 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarbonitrile, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarbonitrile (9:11) (9CI) (CA INDEX NAME)

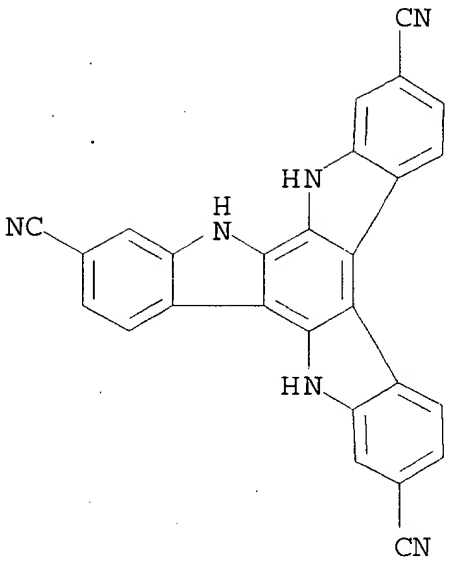
CM 1

CRN 418764-76-8
CMF C27 H12 N6



CM 2

CRN 418764-75-7
CMF C27 H12 N6 . Cl
CCI RIS

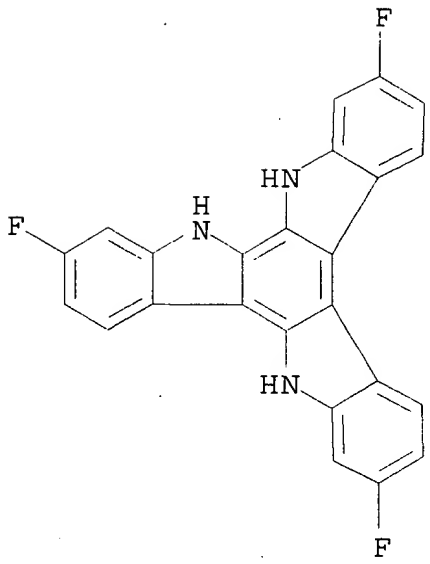


● Cl^-

RN 418764-80-4 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 3,8,13-trifluoro-6,11-dihydro-, radical ion(1+), chloride, compd. with 3,8,13-trifluoro-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (12:13) (9CI) (CA INDEX NAME)

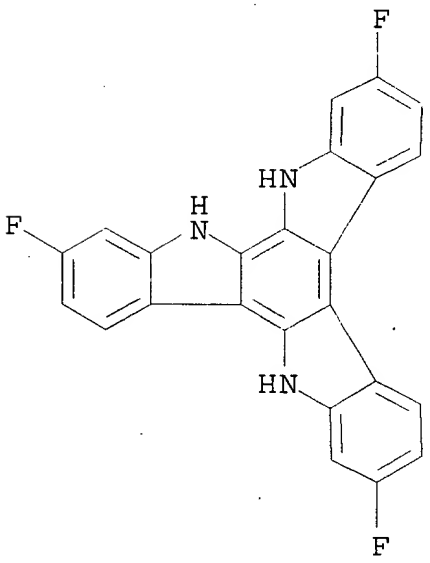
CM 1

CRN 418764-79-1
CMF C24 H12 F3 N3



CM 2

CRN 418764-78-0
CMF C24 H12 F3 N3 . Cl
CCI RIS

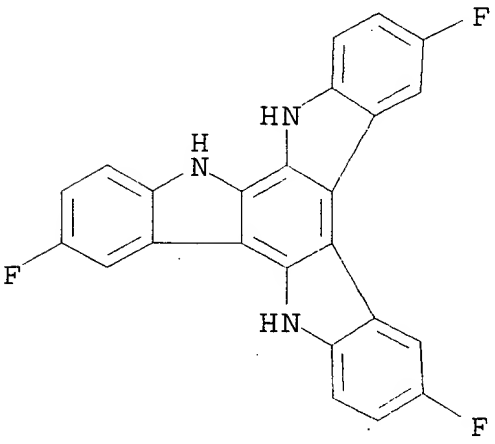


Cl -

RN 418764-84-8 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 2,9,14-trifluoro-6,11-dihydro-, radical ion(1+), chloride, compd. with 2,9,14-trifluoro-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (3:7) (9CI) (CA INDEX NAME)

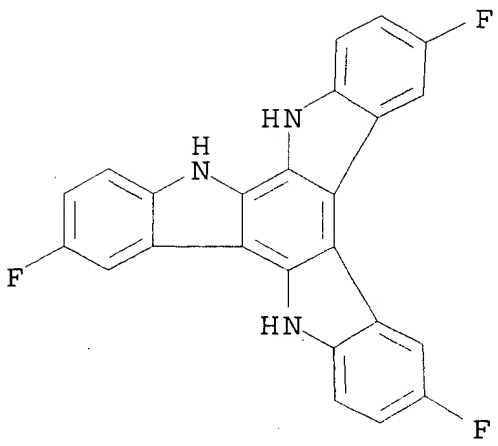
CM 1

CRN 418764-83-7
CMF C24 H12 F3 N3



CM 2

CRN 418764-82-6
CMF C24 H12 F3 N3 . Cl
CCI RIS

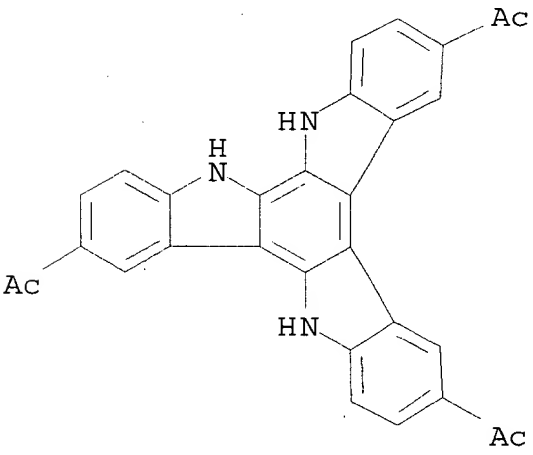


● Cl^-

RN 418764-87-1 HCA
CN Ethanone, 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-triyl)tris-, radical ion(1+), chloride, compd. with 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-triyl)tris[ethanone] (21:29) (9CI) (CA INDEX NAME)

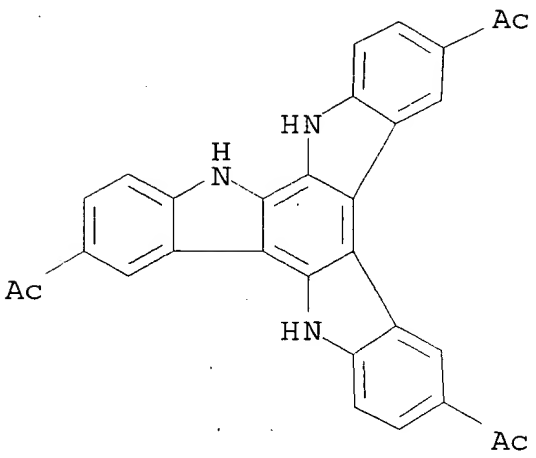
CM 1

CRN 418764-86-0
CMF C30 H21 N3 O3



CM 2

CRN 418764-85-9
CMF C30 H21 N3 O3 . Cl
CCI RIS

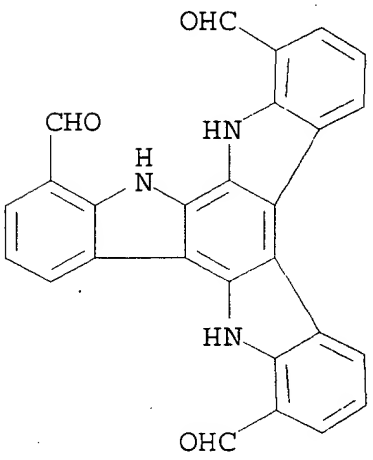


● Cl⁻

RN 418764-90-6 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarboxaldehyde, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarboxaldehyde (21:29) (9CI) (CA INDEX NAME)

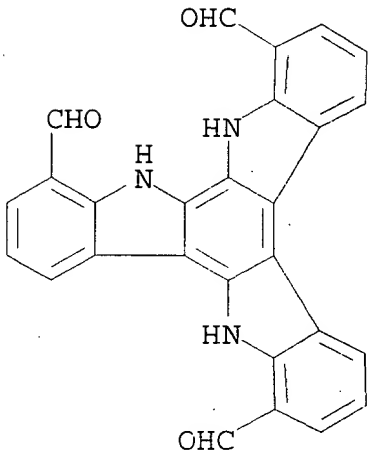
CM 1

CRN 418764-89-3
CMF C27 H15 N3 O3



CM 2

CRN 418764-88-2
CMF C27 H15 N3 O3 . Cl
CCI RIS

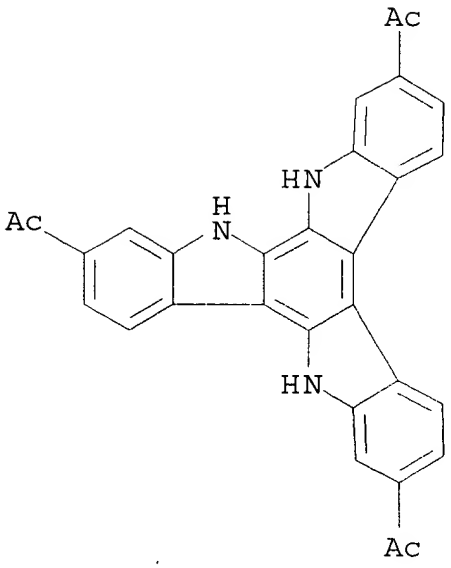


● Cl^-

RN 418764-93-9 HCA
CN Ethanone, 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-triyl)tris-, radical ion(1+), chloride, compd. with 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-triyl)tris[ethanone] (3:7) (9CI) (CA INDEX NAME)

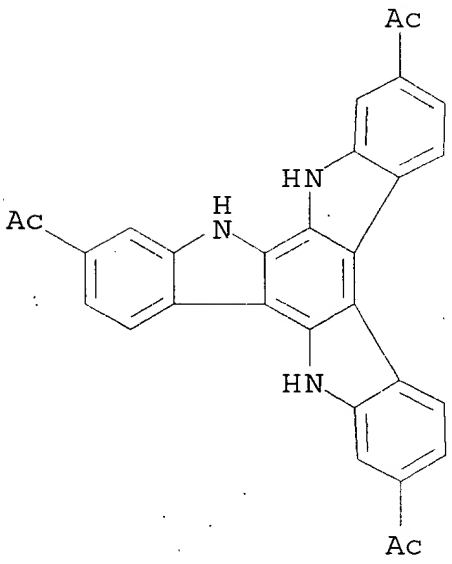
CM 1

CRN 418764-92-8
CMF C30 H21 N3 O3



CM 2

CRN 418764-91-7
CMF C30 H21 N3 O3 . Cl
CCI RIS

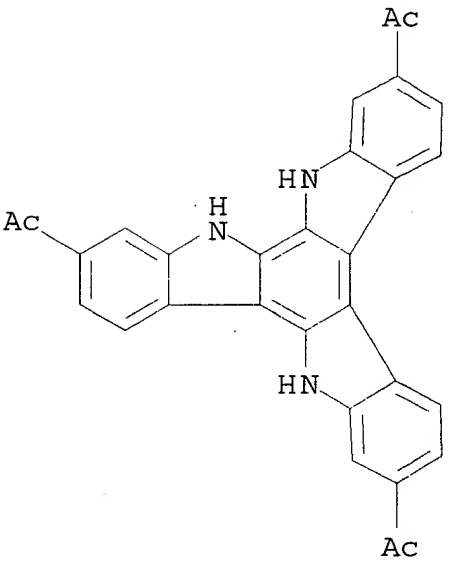


Cl -

RN 418764-93-9 HCA
CN Ethanone, 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-triyl)tris-, radical ion(1+), chloride, compd. with 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-triyl)tris[ethanone] (3:7) (9CI) (CA INDEX NAME)

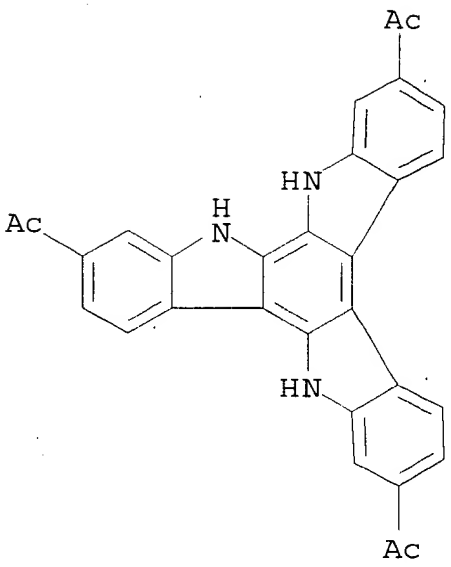
CM 1

CRN 418764-92-8
CMF C30 H21 N3 O3



CM 2

CRN 418764-91-7
CMF C30 H21 N3 O3 . Cl
CCI RIS

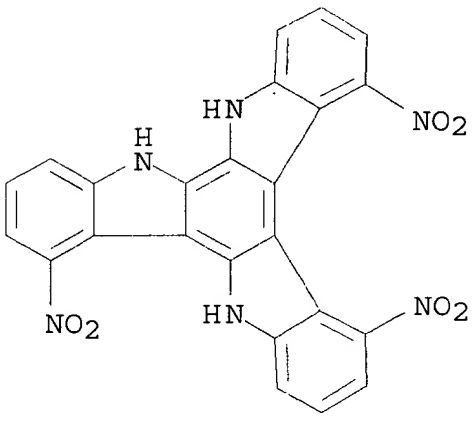


● Cl^-

RN 418764-96-2 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-1,10,15-trinitro-, radical ion(1+), chloride, compd. with 6,11-dihydro-1,10,15-trinitro-5H-diindolo[2,3-a:2',3'-c]carbazole (12:13) (9CI) (CA INDEX NAME)

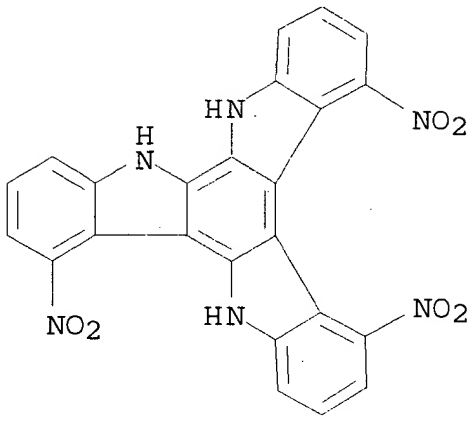
CM 1

CRN 418764-95-1
CMF C24 H12 N6 O6



CM 2

CRN 418764-94-0
CMF C24 H12 N6 O6 . Cl
CCI RIS

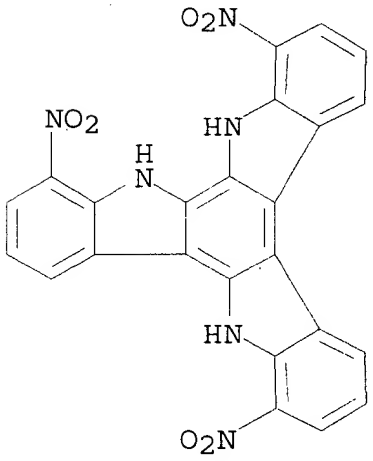


● Cl^-

RN 418764-99-5 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-4,7,12-trinitro-, radical ion(1+), chloride, compd. with 6,11-dihydro-4,7,12-trinitro-5H-diindolo[2,3-a:2',3'-c]carbazole (9:16) (9CI) (CA INDEX NAME)

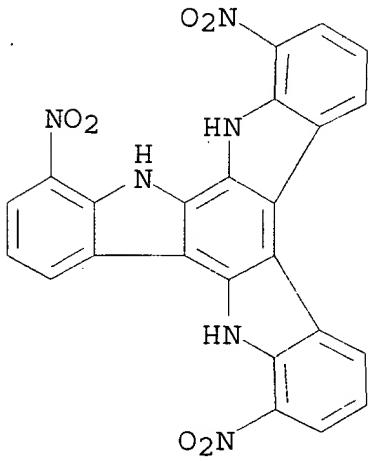
CM 1

CRN 418764-98-4
CMF C24 H12 N6 O6



CM 2

CRN 418764-97-3
CMF C24 H12 N6 O6 . Cl
CCI RIS

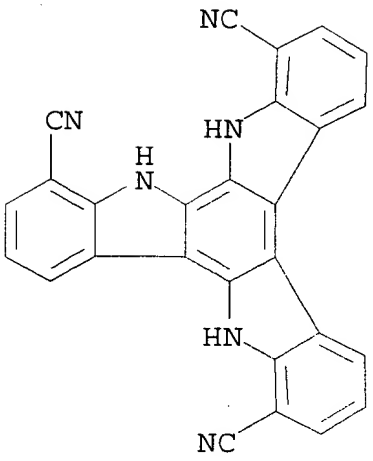


● Cl^-

RN 418765-02-3 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarbonitrile, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarbonitrile (33:67) (9CI) (CA INDEX NAME)

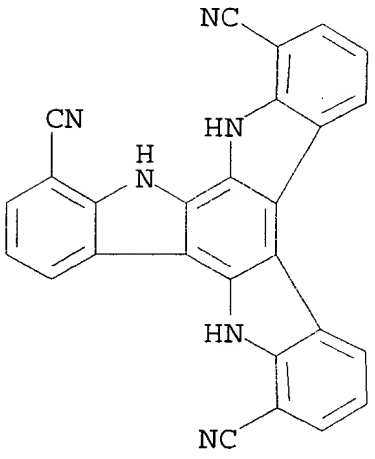
CM 1

CRN 418765-01-2
CMF C27 H12 N6



CM 2

CRN 418765-00-1
CMF C27 H12 N6 . Cl
CCI RIS

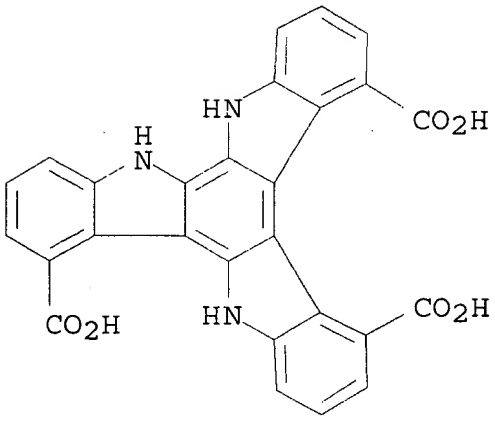


● Cl^-

RN 418765-05-6 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarboxylic acid, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarboxylic acid (39:61) (9CI) (CA INDEX NAME)

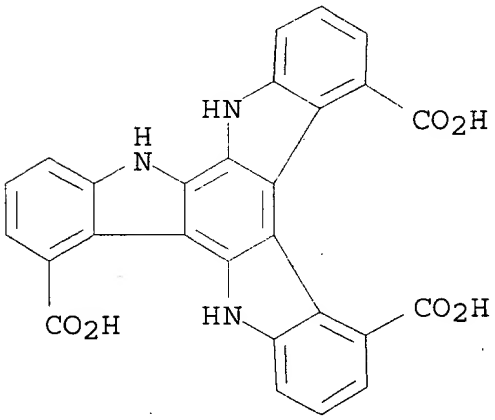
CM 1

CRN 418765-04-5
CMF C27 H15 N3 O6



CM 2

CRN 418765-03-4
CMF C27 H15 N3 O6 . Cl
CCI RIS

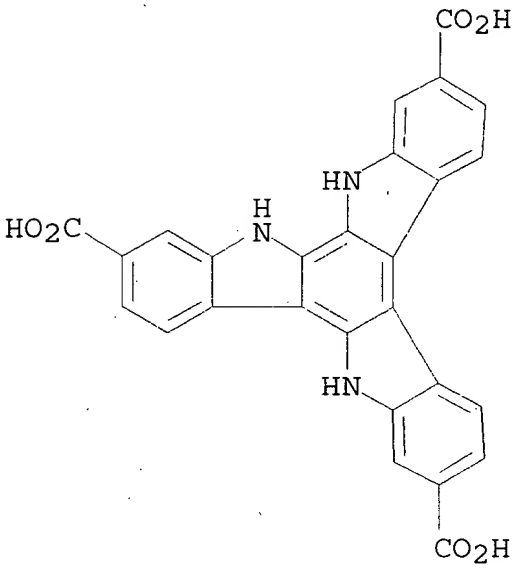


● Cl⁻

RN 418765-08-9 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarboxylic acid, 6,11-dihydro-, radical ion(1+), chloride, 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarboxylic acid (21:29) (9CI) (CA INDEX NAME)

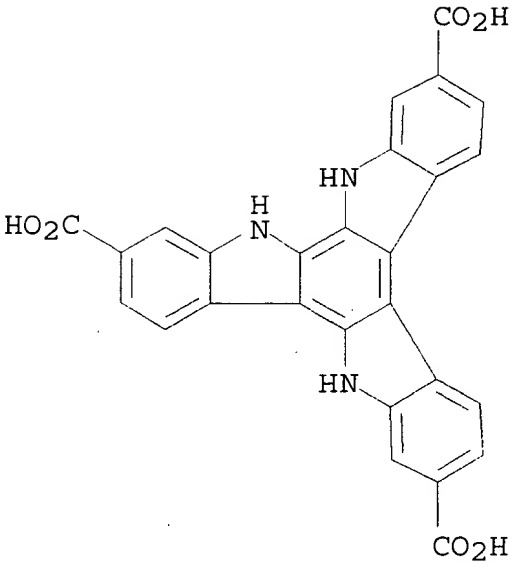
CM 1

CRN 418765-07-8
CMF C27 H15 N3 O6



CM 2

CRN 418765-06-7
CMF C27 H15 N3 O6 . Cl
CCI RIS

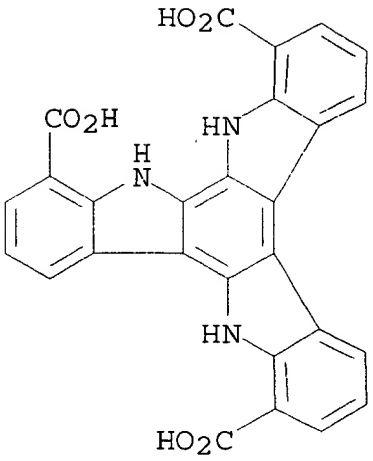


● Cl^-

RN 418765-11-4 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-4,8,12-tricarboxylic acid, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,8,12-tricarboxylic acid (39:61) (9CI) (CA INDEX NAME)

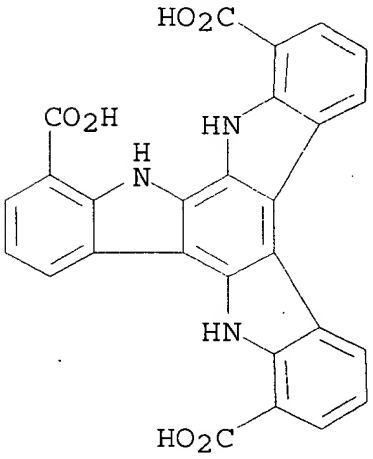
CM 1

CRN 418765-10-3
CMF C27 H15 N3 O6



CM 2

CRN 418765-09-0
CMF C27 H15 N3 O6 . Cl
CCI RIS

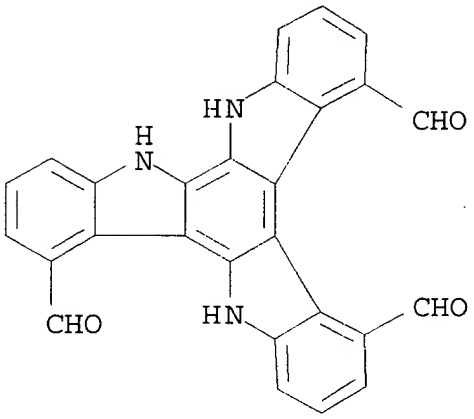


● Cl⁻

RN 418765-14-7 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarboxaldehyde, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarboxaldehyde (9:11) (9CI) (CA INDEX NAME)

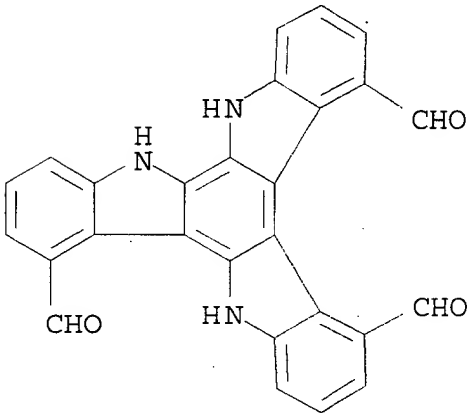
CM 1

CRN 418765-13-6
CMF C27 H15 N3 O3



CM 2

CRN 418765-12-5
CMF C27 H15 N3 O3 . Cl
CCI RIS

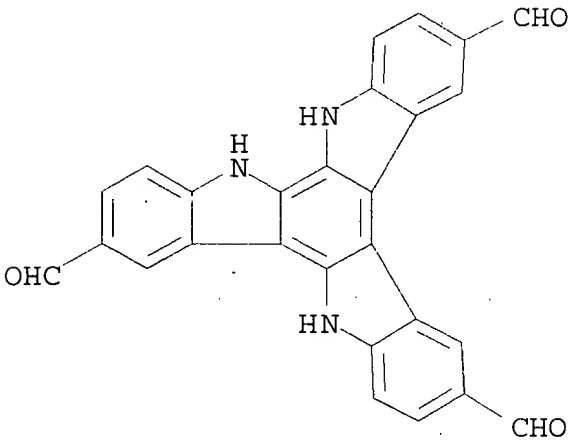


● Cl⁻

RN 418765-17-0 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxaldehyde, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxaldehyde (9:11) (9CI) (CA INDEX NAME)

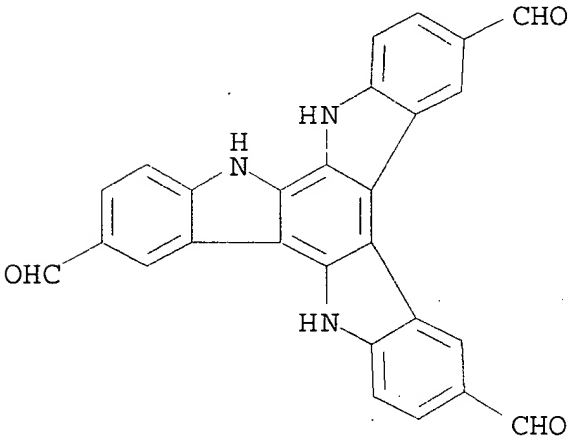
CM 1

CRN 418765-16-9
CMF C27 H15 N3 O3



CM 2

CRN 418765-15-8
CMF C27 H15 N3 O3 . Cl
CCI RIS



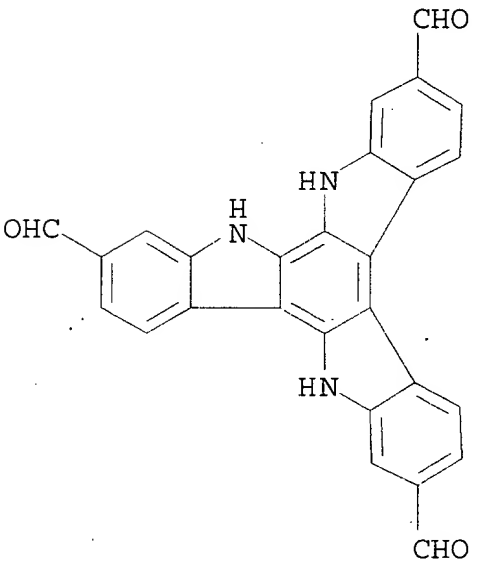
● Cl⁻

RN 418765-20-5 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarboxaldehyde,

6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarboxaldehyde (33:67) (9CI) (CA INDEX NAME)

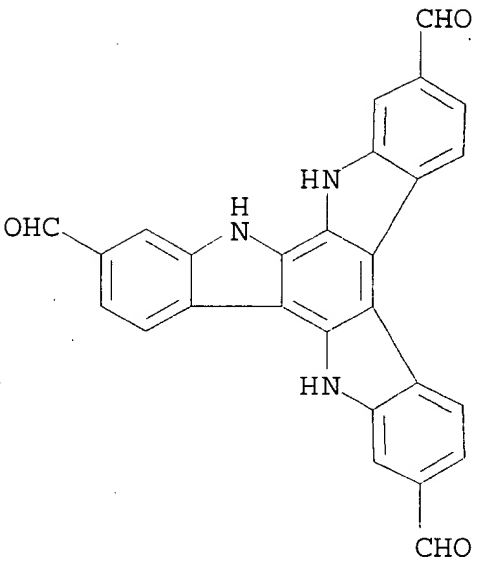
CM 1

CRN 418765-19-2
CMF C27 H15 N3 O3



CM 2

CRN 418765-18-1
CMF C27 H15 N3 O3 . Cl
CCI RIS

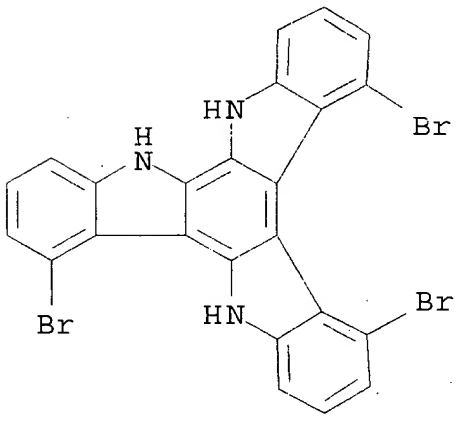


● Cl^-

RN 418765-23-8 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 1,10,15-tribromo-6,11-dihydro-, radical ion(1+), chloride, compd. with 1,10,15-tribromo-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (3:7) (9CI) (CA INDEX NAME)

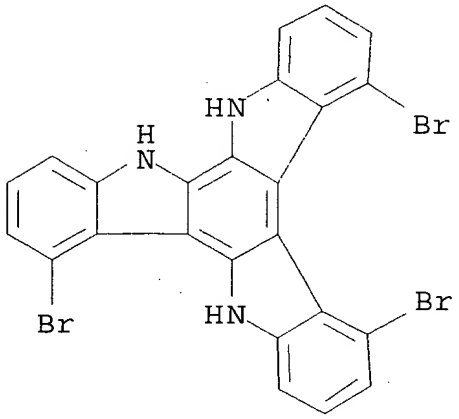
CM 1

CRN 418765-22-7
CMF C24 H12 Br3 N3



CM 2

CRN 418765-21-6
CMF C24 H12 Br3 N3 . Cl
CCI RIS

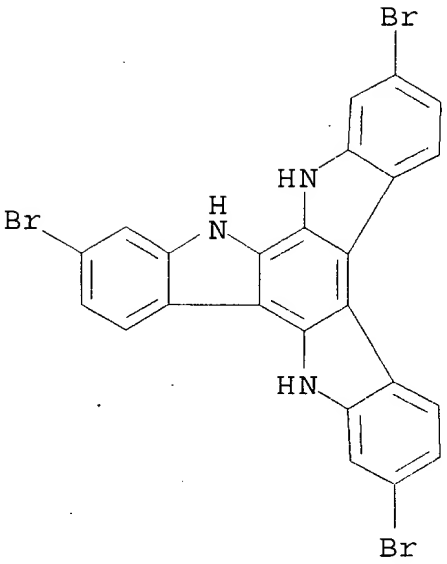


● Cl^-

RN 418765-26-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 3,8,13-tribromo-6,11-dihydro-, radical ion(1+), chloride, compd. with 3,8,13-tribromo-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (9:16) (9CI) (CA INDEX NAME)

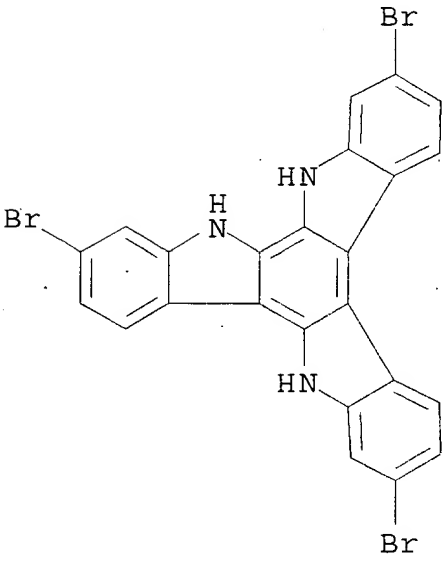
CM 1

CRN 418765-25-0
CMF C24 H12 Br3 N3



CM 2

CRN 418765-24-9
CMF C24 H12 Br3 N3 . Cl
CCI RIS

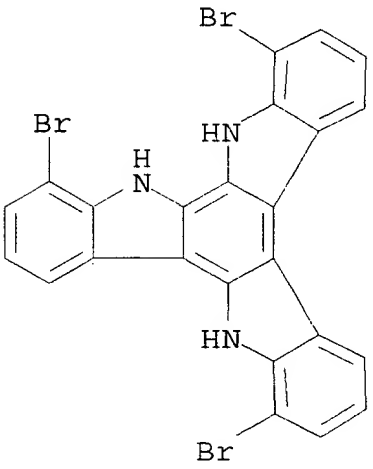


Cl^-

RN 418765-29-4 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 4,7,12-tribromo-6,11-dihydro-, radical ion(1+), chloride, compd. with 4,7,12-tribromo-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (21:29) (9CI) (CA INDEX NAME)

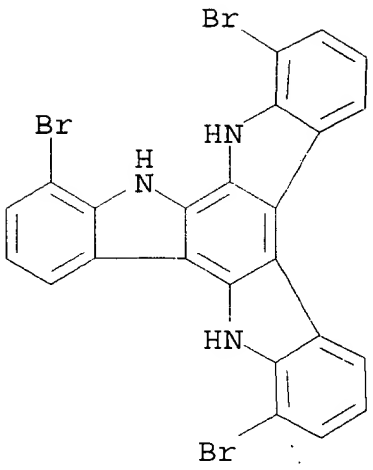
CM 1

CRN 418765-28-3
CMF C24 H12 Br3 N3



CM 2

CRN 418765-27-2
CMF C24 H12 Br3 N3 . Cl
CCI RIS

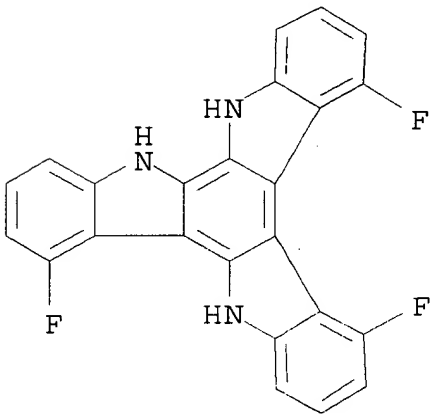


● Cl^-

RN 418765-32-9 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 1,10,15-trifluoro-6,11-dihydro-, radical ion(1+), chloride, compd. with 1,10,15-trifluoro-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (9:16) (9CI) (CA INDEX NAME)

CM 1

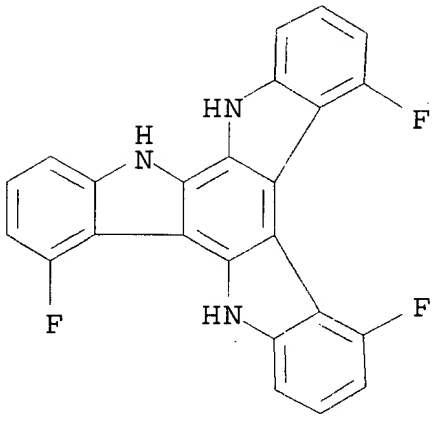
CRN 418765-31-8
CMF C24 H12 F3 N3



CM 2

CRN 418765-30-7

CMF C24 H12 F3 N3 . Cl
CCI RIS

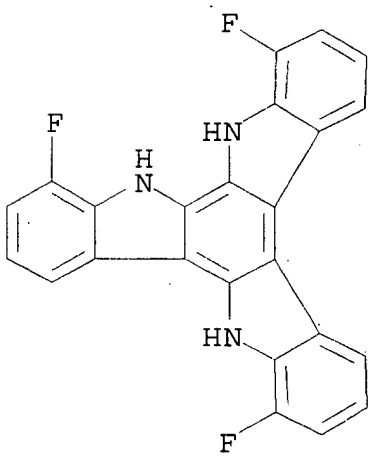


● Cl^-

RN 418765-35-2 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 4,7,12-trifluoro-6,11-dihydro-, radical ion(1+), chloride, compd. with 4,7,12-trifluoro-6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole (21:29) (9CI) (CA INDEX NAME)

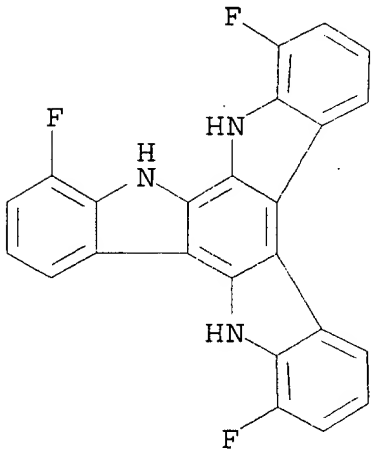
CM 1

CRN 418765-34-1
CMF C24 H12 F3 N3



CM 2

CRN 418765-33-0
CMF C24 H12 F3 N3 . Cl
CCI RIS

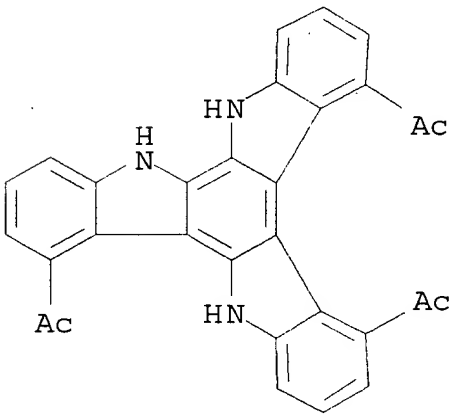


● Cl⁻

RN 418765-38-5 HCA
CN Ethanone, 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-1,10,15-triyl)tris-, radical ion(1+), chloride, compd. with 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-1,10,15-triyl)tris[ethanone] (9:16) (9CI) (CA INDEX NAME)

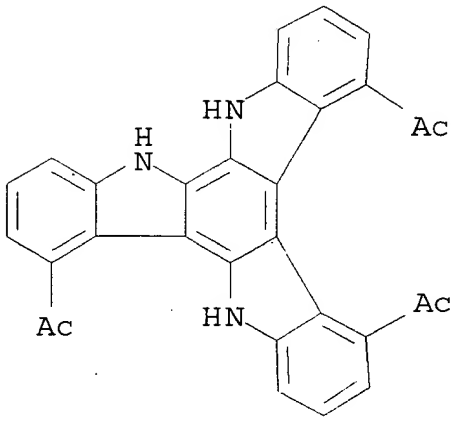
CM 1

CRN 418765-37-4
CMF C30 H21 N3 O3



CM 2

CRN 418765-36-3
CMF C30 H21 N3 O3 . Cl
CCI RIS

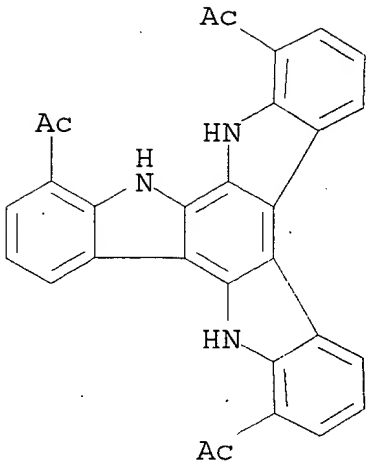


● Cl^-

RN 418765-41-0 HCA
CN Ethanone, 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,7,12-triyl)tris-, radical ion(1+), chloride, compd. with 1,1',1''-(6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,7,12-triyl)tris[ethanone] (39:61) (9CI) (CA INDEX NAME)

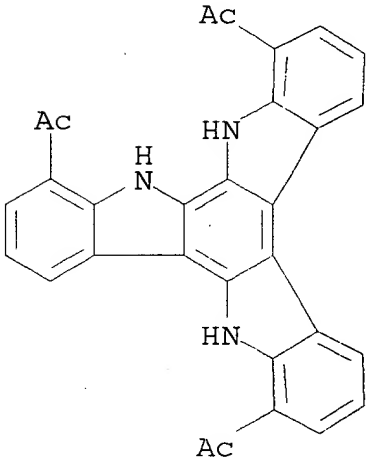
CM 1

CRN 418765-40-9
CMF C30 H21 N3 O3



CM 2

CRN 418765-39-6
CMF C30 H21 N3 O3 . Cl
CCI RIS

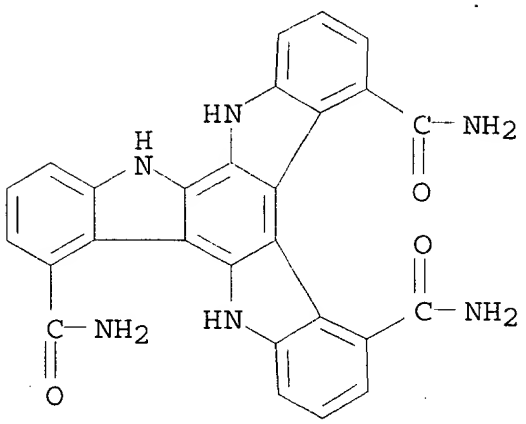


● Cl⁻

RN 418765-44-3 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarboxamide, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarboxamide (21:29) (9CI) (CA INDEX NAME)

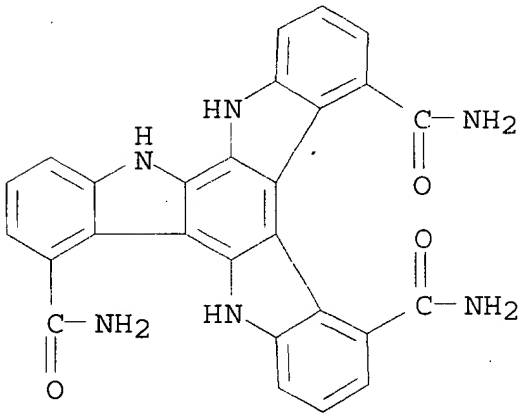
CM 1

CRN 418765-43-2
CMF C27 H18 N6 O3



CM 2

CRN 418765-42-1
CMF C27 H18 N6 O3 . Cl
CCI RIS

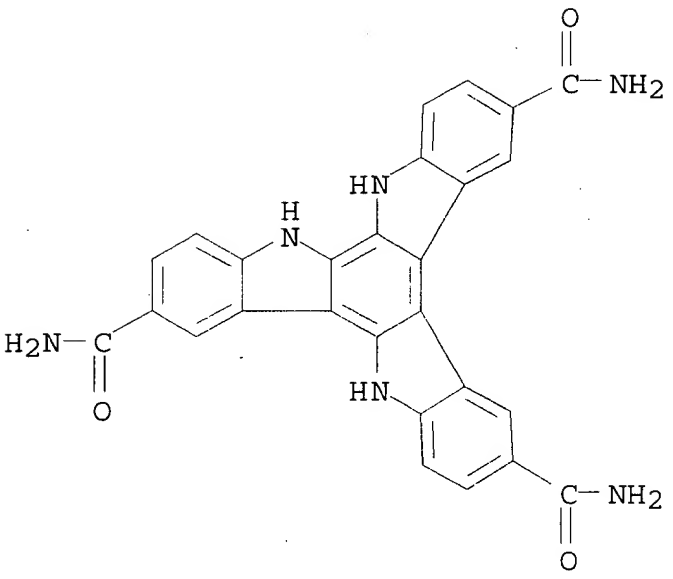


● Cl^-

RN 418765-47-6 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxamide, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxamide (9:11) (9CI) (CA INDEX NAME)

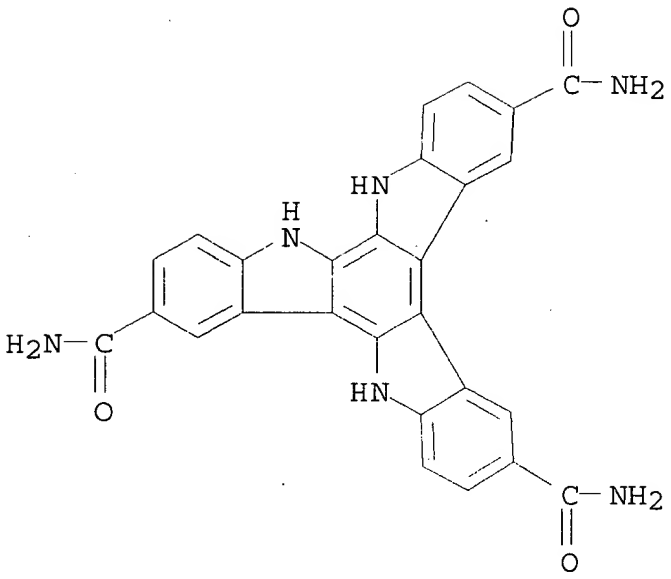
CM 1

CRN 418765-46-5
CMF C27 H18 N6 O3



CM 2

CRN 418765-45-4
CMF C27 H18 N6 O3 . Cl
CCI RIS

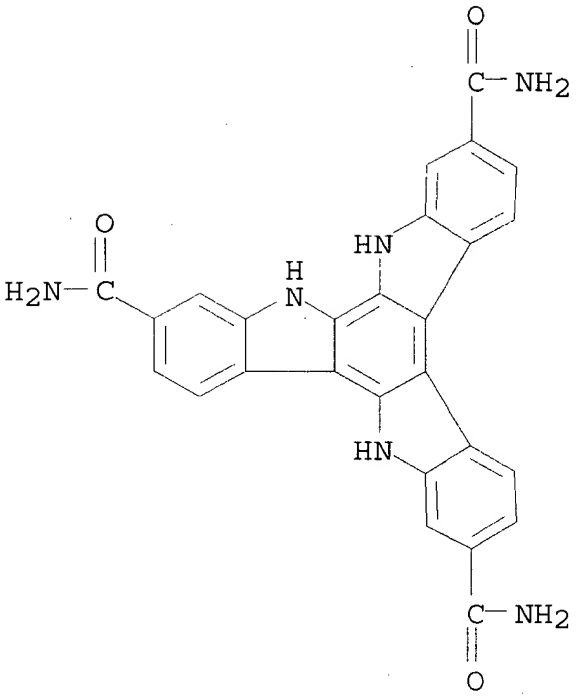


● Cl⁻

RN 418765-50-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarboxamide, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-3,8,13-tricarboxamide (9:16) (9CI) (CA INDEX NAME)

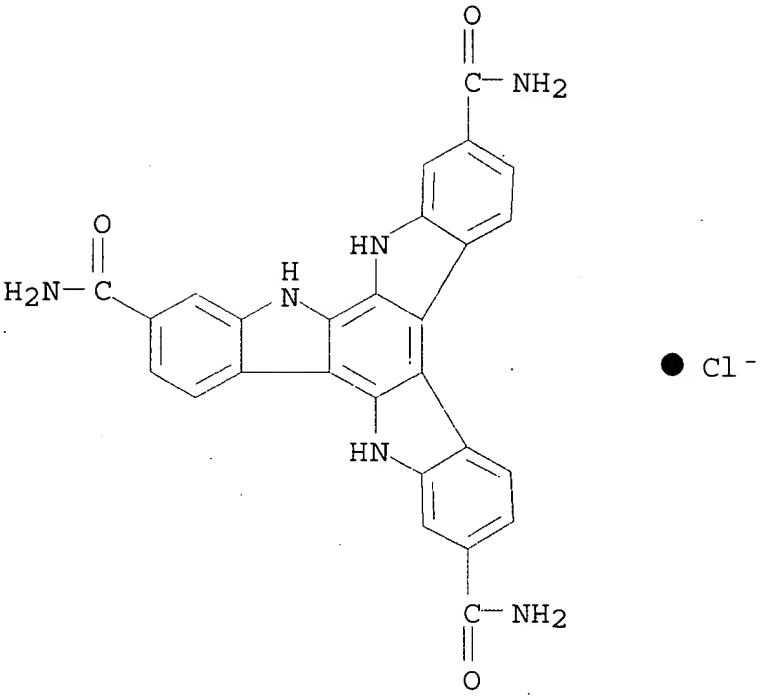
CM 1

CRN 418765-49-8
CMF C27 H18 N6 O3



CM 2

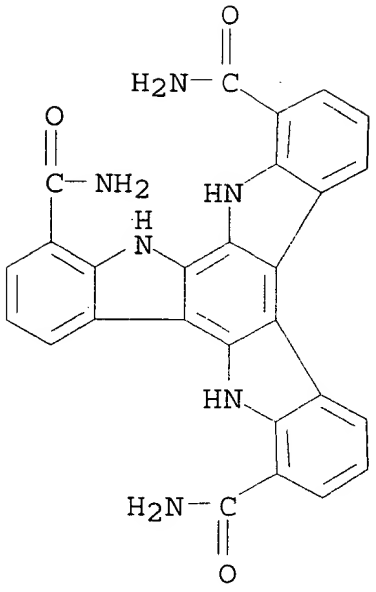
CRN 418765-48-7
CMF C27 H18 N6 O3 . Cl
CCI RIS



RN 418765-53-4 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarboxamide, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarboxamide (39:61) (9CI) (CA INDEX NAME)

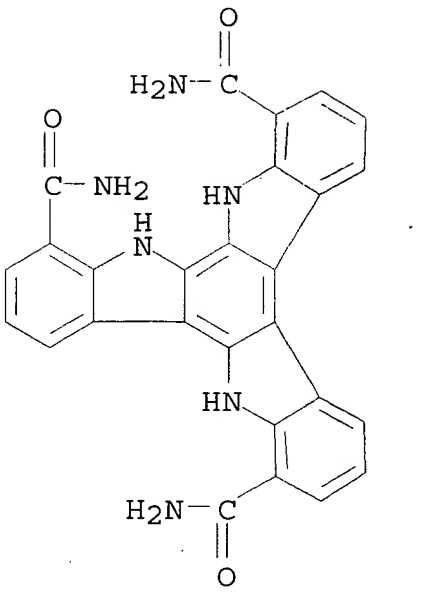
CM 1

CRN 418765-52-3
CMF C27 H18 N6 O3



CM 2

CRN 418765-51-2
CMF C27 H18 N6 O3 . Cl
CCI RIS

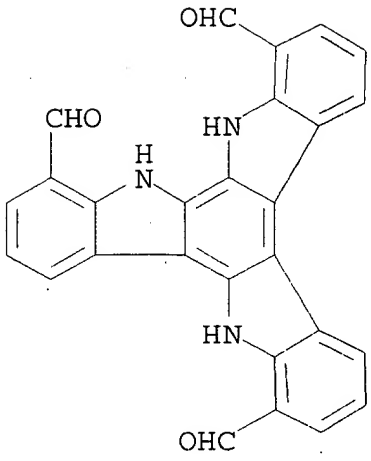


● Cl^-

RN 418765-56-7 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarboxaldehyde, 6,11-dihydro-, radical ion(1+), chloride, salt with 4-methylbenzenesulfonic acid, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-4,7,12-tricarboxaldehyde (33:3:30:67) (9CI) (CA INDEX NAME)

CM 1

CRN 418764-89-3
CMF C27 H15 N3 O3

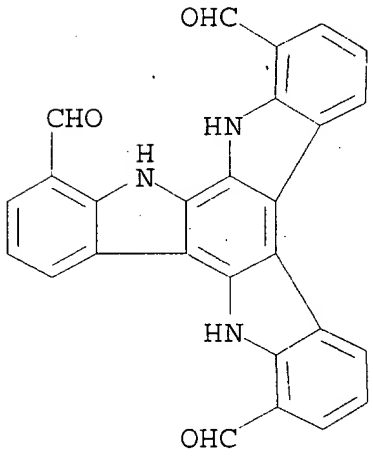


CM 2

CRN 418765-55-6
CMF C27 H15 N3 O3 . 10/11 C7 H7 O3 S . 1/11 Cl

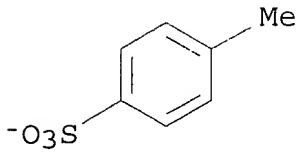
CM 3

CRN 418765-54-5
CMF C27 H15 N3 O3
CCI RIS



CM 4

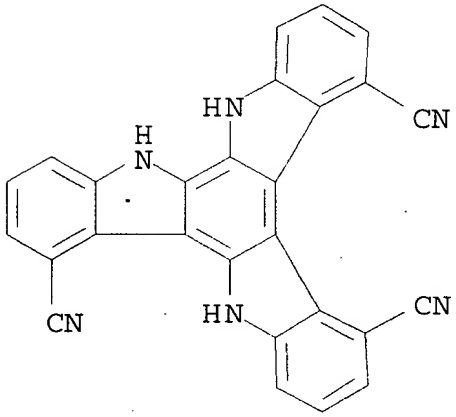
CRN 16722-51-3
CMF C7 H7 O3 S



RN 418765-59-0 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarbonitrile, 6,11-dihydro-, radical ion(1+), chloride, compd. with 6,11-dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-1,10,15-tricarbonitrile (3:7) (9CI) (CA INDEX NAME)

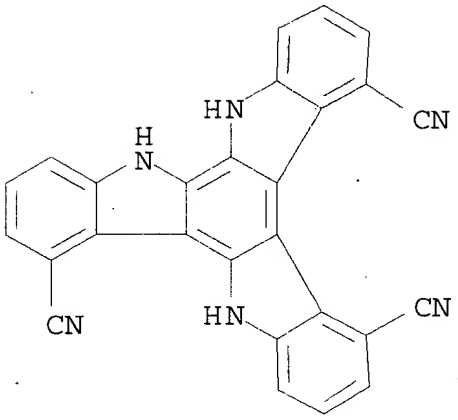
CM 1

CRN 418765-58-9
CMF C27 H12 N6



CM 2

CRN 418765-57-8
CMF C27 H12 N6 . Cl
CCI RIS



● Cl^-

IC ICM C07D487-14
CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 22, 72, 76
IT **417708-84-0P 417708-86-2P 417708-88-4P**
417708-90-8P 417708-93-1P 417708-94-2P
417708-95-3P 418764-77-9P 418764-80-4P
418764-84-8P 418764-87-1P 418764-90-6P
418764-93-9DP, reaction product with polyvinylsulfonic acid
418764-93-9P 418764-96-2P 418764-99-5P
418765-02-3P 418765-05-6P 418765-08-9P
418765-11-4P 418765-14-7P 418765-17-0P
418765-20-5P 418765-23-8P 418765-26-1P
418765-29-4P 418765-32-9P 418765-35-2P
418765-38-5P 418765-41-0P 418765-44-3P
418765-47-6P 418765-50-1P 418765-53-4P
418765-56-7P 418765-59-0P
(prepn. of trimers of indole derivs. (5H-diindolo[2,3-a;2',3'-c]carbazole derivs.) with high redox potentials by oxidative cyclotrimerization of indole derivs. in presence of oxidizing agents and laminated structure thereof)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 5 HCA COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 136:234747 HCA
TITLE: Secondary **battery** and **capacitor** utilizing indole compounds
INVENTOR(S): Kurosaki, Masato; Nishiyama, Toshihiko; Kamisuki, Hiroyuki; Harada, Gaku; Nakagawa, Yuuji; Yoshida, Shinya; Nobuta, Tomoki; Mitani,

Masaya
PATENT ASSIGNEE(S): NEC Corp., Japan
SOURCE: Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

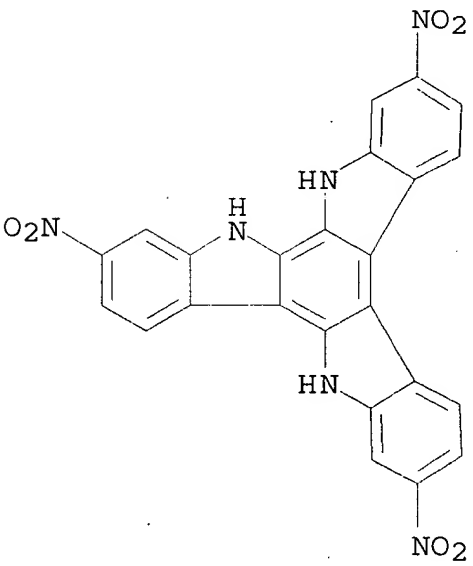
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1189295	A2	20020320	EP 2001-121270	20010905
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002093419	A2	20020329	JP 2000-282309	20000918
US 2002058185	A1	20020516	US 2001-942991	20010831

PRIORITY APPLN. INFO.: JP 2000-282309 A 20000918

AB The present invention provides a secondary **battery** and a **capacitor** which may provide an excellent high rate and cycle characteristic as well as sufficient emf. and capacity. The secondary **battery** and a **capacitor** have an active material of an electrode comprising a trimer compd. comprising three units of indole or indole derivs. in condensed ring form, wherein the second position and the third position of each unit form a six-membered ring, and a proton which can be utilized as a charge carrier of the trimer compd.

IT **403694-95-1**
(secondary **battery** and **capacitor** utilizing indole compds.)

RN 403694-95-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-3,8,13-trinitro- (9CI) (CA INDEX NAME)



IC ICM H01M004-02
ICS H01M004-60; H01G009-04
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST **battery capacitor** indole compd utilization
IT **Battery** anodes
Battery cathodes
Capacitors
Secondary **batteries**
(secondary **battery** and **capacitor** utilizing indole compds.)
IT Carbon black, uses
Carbon fibers, uses
(secondary **battery** and **capacitor** utilizing indole compds.)
IT 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium tetrafluoroborate 1493-13-6, Triflic acid 52232-62-9 220310-61-2, 5-Cyanoindole trimer **403694-95-1**
(secondary **battery** and **capacitor** utilizing indole compds.)
IT 120-72-9, Indole, uses
(secondary **battery** and **capacitor** utilizing indole compds.)

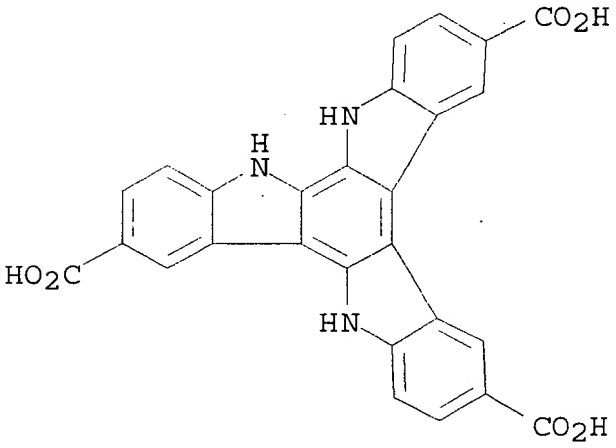
L16 ANSWER 5 OF 5 HCA COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 132:85068 HCA
TITLE: The redox reaction and induced structural changes of 5-substituted indole films
AUTHOR(S): Mount, Andrew R.; Robertson, Mark T.
CORPORATE SOURCE: Department of Chemistry, The University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Physical Chemistry Chemical Physics (1999), 1(22), 5169-5177
CODEN: PPCPFQ; ISSN: 1463-9076
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The electrochem. behavior of 2 types of electrodeposited redox active indole trimer films, 5-cyanoindole (CI) and indole-5-carboxylic acid (ICA), were studied in acetonitrile electrolyte systems. Chronoamperometry, cyclic voltammetry, and transmission line anal. of a.c. impedance data were used to monitor the kinetics and mechanism of the electron transfer process with prolonged redox cycling. As-deposited films of CI and ICA each show high electronic conduction, consistent with the films behaving as a porous metal. CI films show a relatively large, potential dependent barrier to ion insertion, consistent with a compact, poorly solvated structure. In contrast, ICA films display a higher film **capacitance** and a lower barrier to ion insertion, indicating a more open and solvated film. On prolonged slow redox cycling over several days, CI shows little change in coat structure, whereas ICA

shows a marked change in its redox reaction, consistent with a change in the mechanism of electron transfer to redox hopping, in the mechanism of ion transfer to cation insertion. This can be explained by the irreversible deprotonation of a carboxylic acid substituent on the trimer center during oxidn., which induces a change in redox mechanism and film structure. Transmission line anal. of small amplitude ac impedance data is shown to be an excellent method for monitoring this and other such changes in modified electrode systems.

IT **158613-71-9 164671-61-8**
(redox reaction and induced structural changes of 5-substituted indole films)

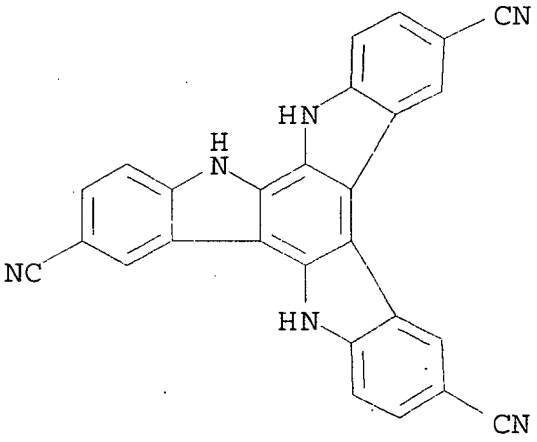
RN 158613-71-9 HCA

CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid, 6,11-dihydro- (9CI) (CA INDEX NAME)



RN 164671-61-8 HCA

CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 27
IT **158613-71-9 164671-61-8**
(redox reaction and induced structural changes of 5-substituted indole films)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l17 1-17 ti

L17 ANSWER 1 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Manufacture of indole derivative trimer compound conductive materials

L17 ANSWER 2 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Electrically conductive compositions, conductors with transparent conductive films of the compositions, and their formation

L17 ANSWER 3 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Corrosion inhibitor comprising indole derivative trimer

L17 ANSWER 4 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Oxidative trimerization of indole: on the formation of dications and radical cations by reaction of indole and nitrosobenzene in the presence of acids

L17 ANSWER 5 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI In situ spectroelectrochemical studies of the fluorescence of 5-substituted indole trimer films

L17 ANSWER 6 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Acid-Promoted Competing Pathways in the Oxidative Polymerization of 5,6-Dihydroxyindoles and Related Compounds: Straightforward Cyclotrimerization Routes to Diindolocarbazole Derivatives

L17 ANSWER 7 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Electrooxidation of N-methylindole

L17 ANSWER 8 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Electrooxidation of 5-substituted indoles

L17 ANSWER 9 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI The synthesis and structural characterization of a charge transfer complex of iodine and indole trimer

L17 ANSWER 10 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Nitrenium ions. Part 2. Acid-catalyzed reactions of indole with nitrosobenzenes. Crystal structure of 2-(indol-3-yl)-3-phenylimino-3H-indole

L17 ANSWER 11 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI The electropolymerization and characterization of 5-cyanoindole

L17 ANSWER 12 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Characterization of the unsymmetrical trimer of indole-5-carboxylic acid by proton NMR spectroscopy

L17 ANSWER 13 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Determination of the structure of electropolymerized indole-5-carboxylic acid

L17 ANSWER 14 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Structure elucidation of some compounds obtained by interaction of indigo with hydrazine

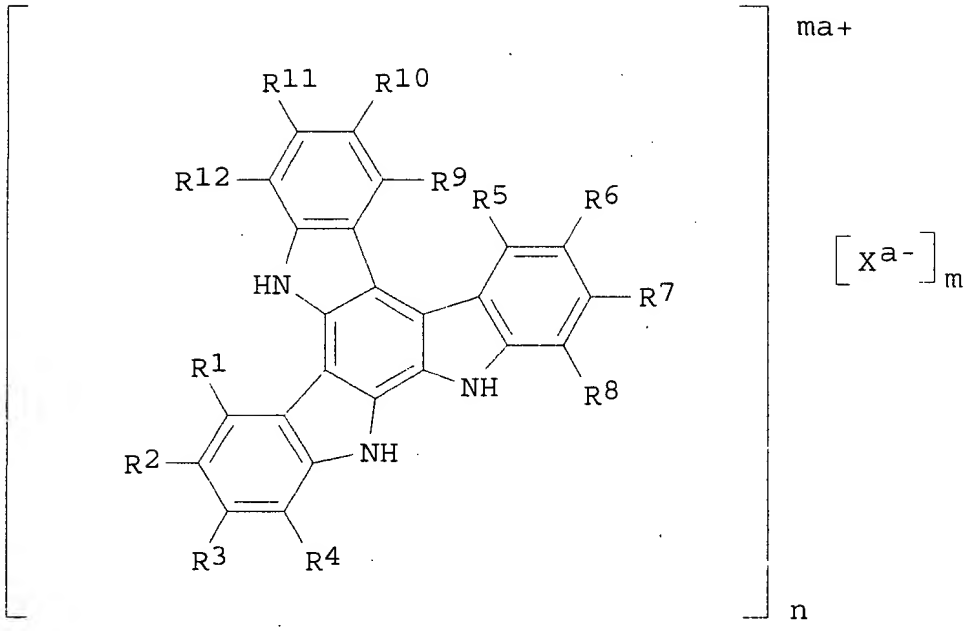
L17 ANSWER 15 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Reactions of indole with hydroxyl radicals and x-ray crystal structure of a novel indole trimer, 14-acetyldiindolo[2,3-a:2',3'-c]carbazole

L17 ANSWER 16 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI Synthesis and studies of tris-indolobenzenes and related compounds

L17 ANSWER 17 OF 17 HCA COPYRIGHT 2003 ACS on STN
TI A novel indole trimer; diindolo[2,3-a:2',3'-c]carbazole

=> d l17 1,2,9 cbib abs hitstr hitrn

L17 ANSWER 1 OF 17 HCA COPYRIGHT 2003 ACS on STN
139:93577 Manufacture of indole derivative trimer compound conductive materials. Maeda, Shinichi; Saito, Yoshikazu; Saito, Takashi (Mitsubishi Rayon Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003187652 A2 20030704, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-390256 20011221.
GI

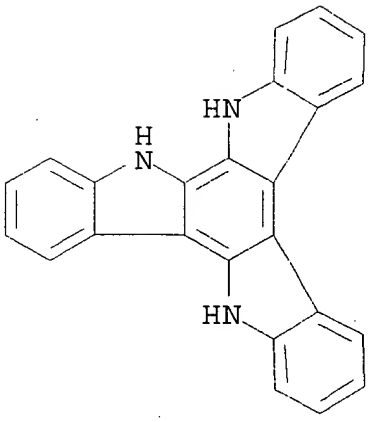


AB The title manuf. of conductive materials involves mixing (1) indole deriv. trimer compds. (I: R1-11 = H, C1-24 n-/p-alkyl, C1-24 n-/p-alkoxy, C2-24 n-/p-acyl, aldehyde, carboxyl, C2-24 carboxy ester, sulfonyl, C1-24 n-/p-sulfonyl esters, cyano, hydroxyl, nitro, amino, amide, halo, cyanovinyl; Xa- = dopant; m = 0-1 as doped ratio; a = no. of ionization valent for X;), (2) a conductive promotor, and (3) a binder in a solvent which has the trimer compd. soly. 0-3 wt.%. The conductor materials have high elec. cond. and excellent moldability, suitable for wide variety of application and uses.

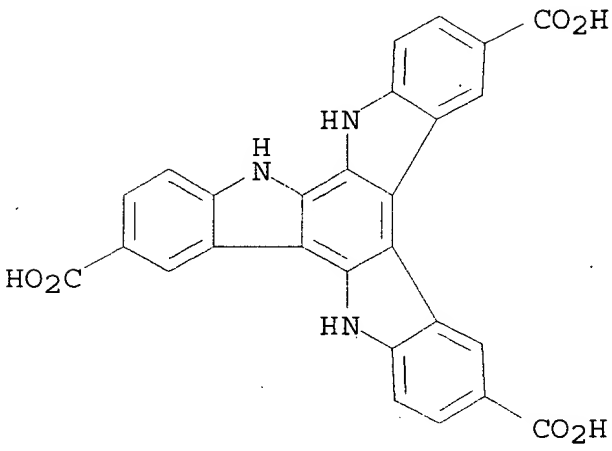
IT **70381-95-2P**, 6,11-Dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole **158613-71-9P 164671-61-8P**, 6,11-Dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile **403694-95-1P 418764-79-1P 418765-46-5P**
(indole derivs. trimer; manuf. of indole deriv. trimer compd. conductive materials)

RN 70381-95-2 HCA

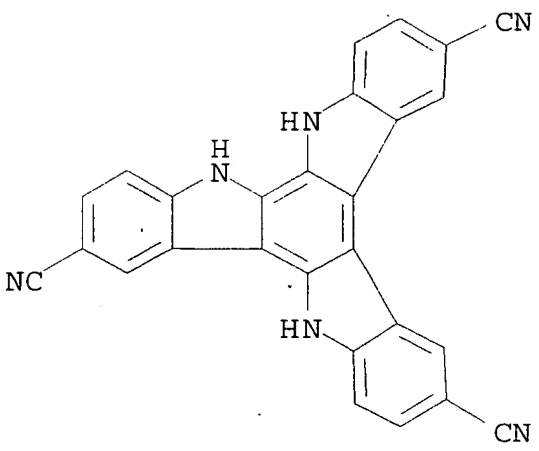
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro- (9CI) (CA INDEX NAME)



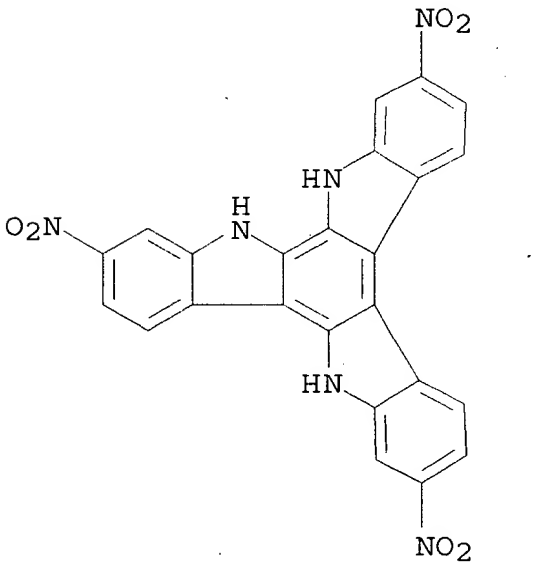
RN 158613-71-9 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid, 6,11-dihydro- (9CI) (CA INDEX NAME)



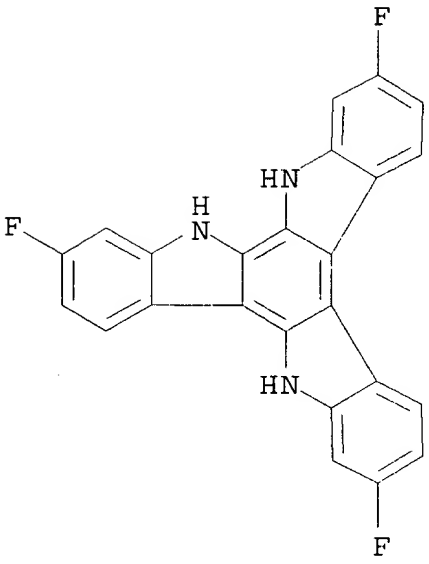
RN 164671-61-8 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro- (9CI) (CA INDEX NAME)



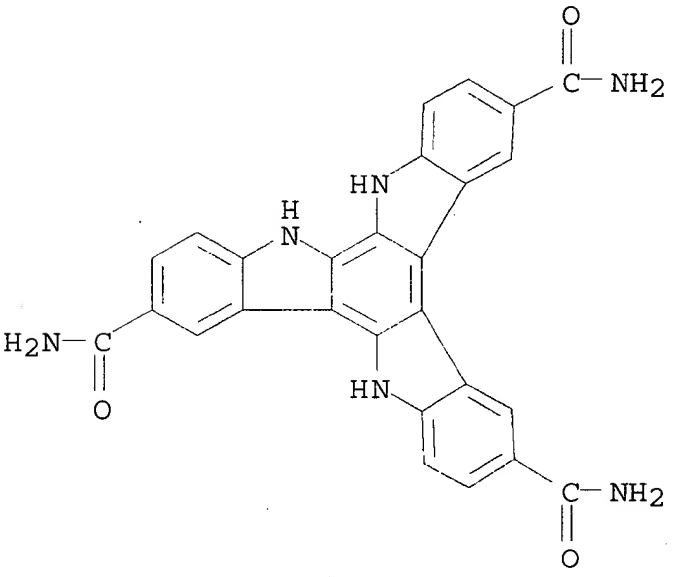
RN 403694-95-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-3,8,13-trinitro- (9CI) (CA INDEX NAME)



RN 418764-79-1 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 3,8,13-trifluoro-6,11-dihydro- (9CI) (CA INDEX NAME)



RN 418765-46-5 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxamide, 6,11-dihydro- (9CI) (CA INDEX NAME)



IT **70381-95-2P**, 6,11-Dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole **158613-71-9P 164671-61-8P**, 6,11-Dihydro-5H-diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile **403694-95-1P 418764-79-1P 418765-46-5P**
(indole derivs. trimer; manuf. of indole deriv. trimer compd. conductive materials)

L17 ANSWER 2 OF 17 HCA COPYRIGHT 2003 ACS on STN
138:347327 Electrically conductive compositions, conductors with transparent conductive films of the compositions, and their formation. Saito, Takashi; Maeda, Shinichi; Saito, Yoshikazu (Mitsubishi Rayon Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003123532 A2 20030425, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-316936 20011015.

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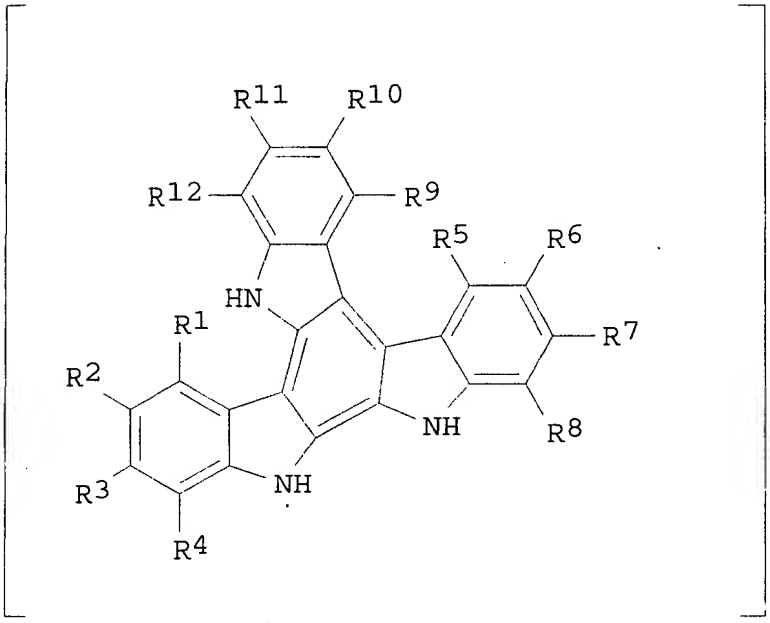


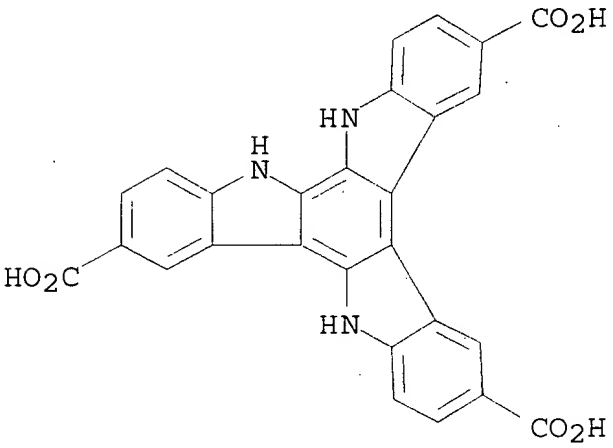
I

AB The compns. contain (A) indole derivs. trimers, (B) solvents, (C) crosslinking agents which may be (D) silane coupling agents represented by general formula YXSiR48R49R50 [R48- R50 = H, C1-6 alkyl, C1-6 alkoxy, amino, acetyl, Ph, halo; X = (CH2)n, (CH2)nO(CH2)l; n, l = 1-6; Y = OH, SH, amino, epoxy, epoxycyclohexyl], and optionally (C) colloidal SiO2, (F) bases, (G) macromols., (H) surfactants, and (I) inorg. salts. Preferably, the indole derivs. trimers comprise I [R1-R12 = H, C1-24 C1-24 alkyl, C2-24 alkoxy, C2-24 acyl, aldehyde, CO2H, C1-24 sulfonate, cyano, OH, NO2, amino, amide, halo; Xa- = .gtoreq.1 of 1-3-valent anion of Cl, Br, I, F, H2SO4, hydrogensulfate, H3PO4, B fluoride, perchloric acid, thiocyanic acid, AcOH, propionic acid, methanesulfonic acid, p-toluenesulfonic acid, trifluoroacetic acid, and trifluoromethanesulfonic acid ion; a = 1-3 integer; m (dopant ratio) = 0-0.5]. Preferably, the indole derivs. trimers are prepd. by reacting indole derivs. with oxidizing agents in solvents. The elec. conductors are obtained by applying the elec. conductive compns. on .gtoreq.1 side of a substrate to provide transparent

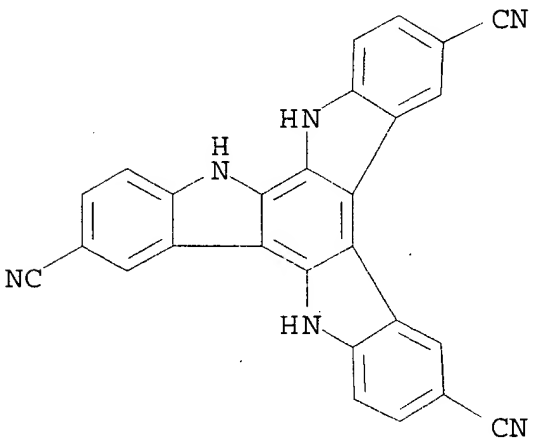
elec. conductive layer(s), (doping with acids,) and leaving at ambient temp. or subjecting to thermal treatment. The compns. have high elec. cond. free from moisture dependency, good film forming property, moldability, transparency, resistancees to solvents and water, high hardness, and weather resistance.

IT **158613-71-9P 164671-61-8P 514225-85-5P**
(elec. conductive compns. contg. indole derivs. trimers for transparent conductive films)

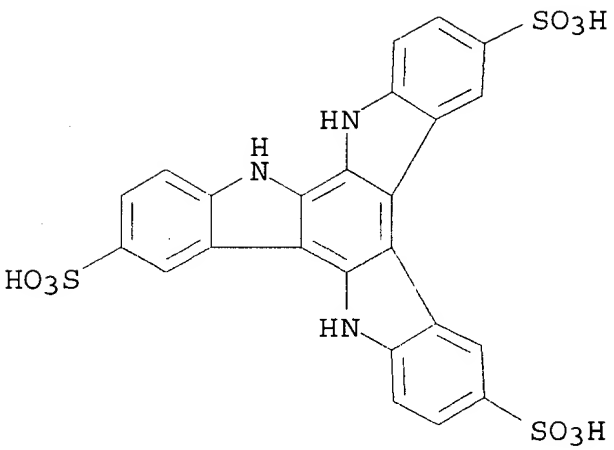
RN 158613-71-9 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarboxylic acid, 6,11-dihydro- (9CI) (CA INDEX NAME)



RN 164671-61-8 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-tricarbonitrile, 6,11-dihydro- (9CI) (CA INDEX NAME)



RN 514225-85-5 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole-2,9,14-trisulfonic acid, 6,11-dihydro- (9CI) (CA INDEX NAME)



IT **158613-71-9P 164671-61-8P 514225-85-5P**
(elec. conductive compns. contg. indole derivs. trimers for transparent conductive films)

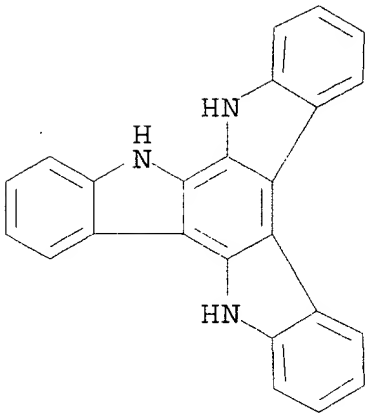
L17 ANSWER 9 OF 17 HCA COPYRIGHT 2003 ACS on STN
125:287245 The synthesis and structural characterization of a charge transfer complex of iodine and indole trimer. Bocchi, Vittorio; Colombo, Arturo; Porzio, William (Dipartimento di Chimica Organica e Industriale, Universita di Parma, Parma, 43100, Italy). Synthetic Metals, 80(3), 309-313 (English) 1996. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB Indole electrooxidn. using iodine as a supporting electrolyte yields sheaves of very thin black needles identified as a charge transfer complex of iodine and an indole trimer. X-ray diffraction studies on this material allows one univocally to propose a reliable crystal model in which a disorder involving both I3- residues and org. mols. is evidenced. The structure consists of stacked mols. of indole trimers (cations) and columns of iodines (anions).

IT **183004-21-9P**
(electrosynthesis)
RN 183004-21-9 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro-, compd. with iodine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 70381-95-2
CMF C24 H15 N3

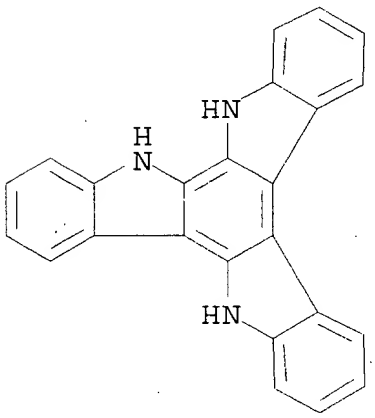


CM 2

CRN 7553-56-2
CMF I2

I—I

IT **70381-95-2P**
(electrosynthesis of indole trimer by electrooxidn. of indole with iodine)
RN 70381-95-2 HCA
CN 5H-Diindolo[2,3-a:2',3'-c]carbazole, 6,11-dihydro- (9CI) (CA INDEX NAME)



IT **183004-21-9P**
(electrosynthesis)
IT **70381-95-2P**
(electrosynthesis of indole trimer by electrooxidn. of indole with iodine)